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Railway Age

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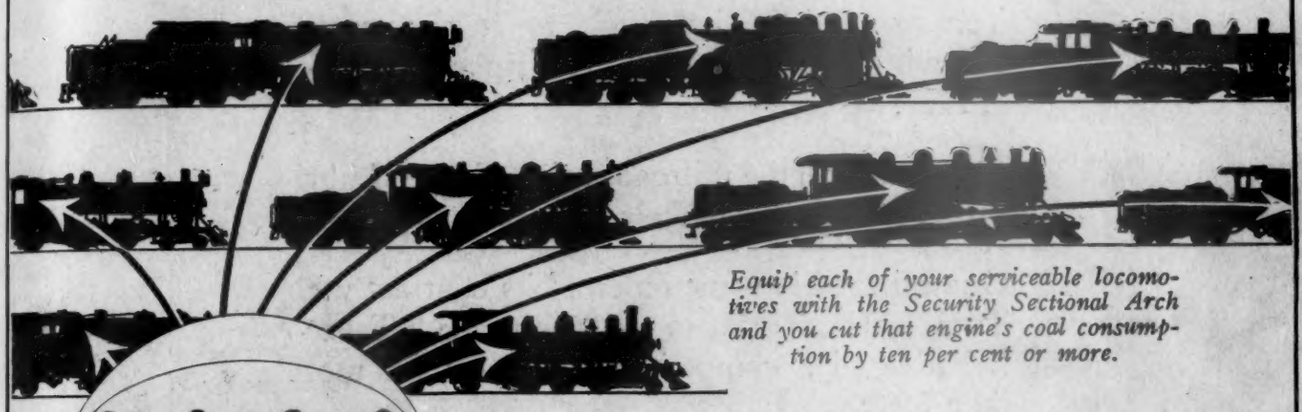

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AMERICAN ARCH COMPANY, Inc.
NEW YORK CHICAGO

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* * * * *

One of our oldest railroad customers has had Texaco Lubrication for fourteen years—renewing its contract five times since November 1, 1909.

Practically all the railroads using Texaco Lubrication have renewed their contracts.

One railroad has just renewed its contract with Texaco, where prior to contracting with Texaco it had used a competitor's products for more than forty years.

Another railroad whose contract we had some years ago, has returned to Texaco Lubrication, and renewed its contract recently.

* * * * *

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THE GROWTH OF ITS RAILROAD BUSINESS AND THE LARGE PERCENTAGE OF RENEWALS IS PROOF OF SATISFIED CUSTOMERS.

THE TEXAS COMPANY, U.S.A.

Railway Sales Division

New York Chicago Houston Atlanta
St. Louis New Orleans Dallas
Cleveland San Francisco St. Paul

EDITORIAL

Railway Age

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Efficient Distribution of Refrigerators

The code of rules for distributing empty refrigerator cars, which is printed on another page, is published, not as the most perfect imaginable code, but as the best that we have seen. It embodies the carefully recorded experiences of car distributors on one of the large western roads. The problem of distributing coal cars is sufficiently perplexing, when cars are scarce; but the refrigerator field affords a still larger opportunity for diplomatic skill, for instead of having *knowledge* of the rating of different shippers (based on past records) dependence must be placed on *estimates,* based on prognostications which are subject not only to the vicissitudes of weather but to various other uncertainties. If we were to criticise these rules we should say that they are not quite considerate enough of the sensitive shipper, who feels that his little loading platform is the most important one on the road; who forgets that there are scores or hundreds of others who have rights equal with his. The rules are fair; but to convince the shipper—some shippers—it is necessary to explain this fairness from a dozen different angles. However, the author will probably say that we are demanding an impossibility; for rules must be brief. And, as already suggested, the business of distributing cars to importunate shippers is diplomacy; and it is evident that the compiler of these rules knows how to be a diplomat. If he has not made the language of every rule perfect in this respect it can be said that he has, nevertheless, done better than is done in the great majority of such documents.

A Slow Government

Distribution of cars to fruit shippers would be easy enough if only there were cars enough; and with a detailed code of rules such as that printed in this issue of the *Railway Age,* a minimum of care would be necessary; but when the car supply is a week behind time the anxious distributor groans in spirit over the sins of the dilatory consignees. According to a press despatch, the Southern Pacific last week became so desperate as to request the Interstate Commerce Commission to prod the Eastern railroads to return refrigerators to California. Fruit has been moving eastward for a month at the rate of about a thousand cars a day, while hundreds of cars remain at eastern termini loaded. This apparently is not due so much to slow unloading as to absolute paralysis—no unloading at all. A very large proportion of the fuit consists of grapes, and it appears that, because of bad guesses as to the wishes or demands of the home-brewing consumers, or for some other occult reason, hundreds of cars have remained many days undisposed of. The reporter says that the Southern Pacific suggested that a higher demurrage rate would help to dynamite these aggregations of immovable cars. It is not probable that that is an official recommendation; and yet it is not to be treated as an idle notion; for that road has had much valuable and instructive experience (in California) with a three-dollar rate, and also some with a six-dollar rate. The essential trouble, however, is our clumsy governmental machinery. An advance in the daily demurrage rate would be the most reasonable thing in the world, in situations like the present one; but by the time the government, the shippers and the consignees could be got together and be induced to give their assent to an increase, the crisis would be over. Grapes, at this time of year, cannot await the result of deliberations of the Interstate Commerce Commission upon the question of a change in demurrage rates.

One Way Locals

A certain road, which in several districts operates local freight service in but one direction a day, often finds it necessary to have crews of through trains do some local work in the direction in which no local service is provided on that day. The agreement with the brotherhoods provides for payment of these through crews at local rates whenever the number of points at which they do local work exceeds four. Dispatchers, of course, in arranging for this local work by through crews try to see to it that no one crew works at a sufficient number of stations to entitle it to the higher local rate. This is entirely legitimate, but when local work is done at practically every station in the district by several through crews, each of them working at the maximum number of places without the higher rate, the men are apt to begin to regard the management as grasping. They feel that the agreement providing for pay at the through rate for a minimum amount of local work was made for exceptional cases and they resent the use of it to secure the performance of regular local work in lieu of providing additional local trains. Moreover, there is some suspicion that the company which requires as much local work as it can of its through crews is not as interested as it claims to be in expediting the movement of its through trains, so long as no overtime has to be paid. To put on additional local trains would cost some money, to be sure; but would they be as costly as the attitude on the part of the men which the present system has caused?

13.7 Per Cent On October 1

Last April the American Railway Association determined that by October 1, the railroads would reduce their locomotives held for repairs requiring over 24 hours to but 15 per cent of the total on line. Inasmuch as for the first three months of the year the percentage of locomotives held for heavy repairs had run about 20 per cent, this idea of effecting a reduction to 15 per cent by October 1 was considered by many to be ambitious to say the least. It took an optimist, many felt, to be sure that it represented a program that could be expected to be rewarded with realization. The railroads reached the goal one month ahead of time because on September 1 locomotives held for heavy repairs were actually only 14.7 per cent. Even when that figure was announced there followed another period of expectancy because there was a certain feeling that the railroads would have difficulty in keeping their motive power in so good a condition. The unexpected has happened again, however, because the report of October 1 shows a marked improvement even beyond the report of September 1. On October 1, the percentage of locomotives held for repairs requiring over 24 hours was 13.7 per cent of the total on line. The number of locomotives

held for heavy repairs, 8,789, is the lowest ever shown since the A.R.A. equipment condition compilation was begun. Conversely the number in serviceable condition, 54,159, is the largest yet reported. Ready means of comparison with periods prior to the time the present form of compilation was established are not available, but it is to be presumed that the locomotive condition on the railroads today is about the best that it has ever been. It has cost money to bring this about but the reward has been ample because railroad service this year has been remarkably good and the favorable motive power situation is not the least of the reasons why it has been so.

What of Work Train Service?

With the growing increase in the cost of train service there has been a general tendency on the part of maintenance of way and construction officers to dispense with the use of work trains wherever it is physically possible to do so. One condition which has had a marked influence on this tendency is to be found in the inability of the operating or engineering officers to exercise any discretion in the selection of the work train crews since this is determined arbitrarily by the seniority rules. The effectiveness of work train service is dependent almost entirely on the ability and mental attitude of the conductor. A willing, resourceful and energetic man can do wonders, and fortunate indeed is the roadmaster or construction man who is assigned a man of this sort. However, more often than not he must struggle along with a conductor who has exercised his "rights" to the work train assignment for no other reason than it may afford him an excellent chance to loaf. How severe a strain this condition may impose on the maintenance or construction officer, is illustrated by an incident which recently occurred on a piece of construction in progress on a heavy traffic line. The construction engineer found a flagman protecting a work train asleep at his post, and as he explained it, "My duty to report the man was clear, of course, but I actually hesitated to do so because I knew it would make the conductor sore, with the result that I would not get any work out of him at all." It has been suggested by some of the train service brotherhoods that the question of discipline could well be placed in their hands since the members of the unions realize that infractions of discipline which jeopardize the safety of trains is a matter of even more concern to them than to the railroads. However, in view of the incident related above it would seem that the mental attitude of all train service men has not reached that high plane which would warrant any such action by the railroads. In the meantime, there appears to be no relief in sight for the officer who requires the services of a work train if he is so unfortunate as to fall heir to a train crew that will not play the game.

6.7 Per Cent Bad Order Cars

The A.R.A. transportation program called for an accomplishment in equipment repair activity which would result on October 1, in only 15 per cent of the locomotives held for heavy repairs and for but 5 per cent of freight cars awaiting repairs. The task set as to locomotives was accomplished so well that on October 1 the locomotives awaiting heavy repairs totaled only 13.7 per cent of the total on line. The goal set for freight car repairs, however, has failed of accomplishment because on October 1 the bad order cars totaled over 5 per cent. To be exact they totaled 151,332 cars or 6.7 per cent of the total on line. There may be some ground for disappointment in that the goal set for freight car repairs was not reached, but when one realizes what has been accomplished in bringing the percentage down to a figure as low as even 6.7 per cent, there is much room for gratification. One year ago, on October 1, 1922, the number of freight cars in bad order was 291,654, or 12.8 per cent of the total on line, which was one of the several reasons that the car shortage existing at that time was as severe as it was. Two years ago, on October 1, 1921, the bad order car figure was 364,372 or 15.8 per cent of the total cars on line. As compared with these figures the 6.7 per cent in the last report represents remarkable improvement. Even though the railroads have not succeeded in accomplishing as splendid a result with their car repairs as they have in bringing their unserviceable locomotives down to 13.7 per cent, they have, nevertheless, brought their car repair situation to a point that can properly be said to represent a normal and desirable condition. They have, therefore, finally overcome the unfortunate situation which was left to them as an aftermath of federal control, and which the low earnings of the depression of 1921 accentuated. The maintenance of equipment expenses of the railroads this year have been abnormally large. For the first seven months of 1923 they were $183,356,577 or 27.4 per cent greater than for the first seven months of 1922, and net operating income has been decreased accordingly. The maintenance of equipment expenses in the August and September reports may be large also, but from October on they will presumably again be normal because the delayed repair work will have been done and expenses will henceforth only have to be sufficient to cover current work. There will thus then be brought to an end what has proved to be a very unfortunate chapter in recent railroad history.

The Trend of Traffic and Earnings

THE PERCENTAGE of net return earned monthly by the railways upon their valuation showed a decline in the last three months for which the statistics are available—June, July and August. The return earned in the five months ending with May was reported as at the annual rate of 5.69 per cent. In June it was only 5.47 per cent, in July 4.93 per cent and in August 4.94 per cent. In consequence the average for the first eight months of the year was only 5.4 per cent.

The tendency shown is disappointing. The results reported for the early part of the year had given rise to a hope that in the entire year the carriers would earn the 5¾ per cent upon their valuation to which the Interstate Commerce Commission holds that they are entitled. It is worth while to inquire why the percentage of return earned, after having for some months shown a tendency to increase, recently has shown the opposite tendency.

The estimate made for each month of the annual rate at which net return was earned is based, in view of past experience, upon the assumption that there will be certain seasonal fluctuations in traffic. In view of the usual experience of the past it is assumed that traffic and earnings will more or less steadily increase until a peak is reached in October.

The principal reason why the statistics show a decline in the percentage of net return earned since about the middle of the year is disclosed by statistics just issued by the Interstate Commerce Commission regarding the monthly ton mileage of freight business. In the first five months of 1923 the ton mileage was larger in every month except February than in the corresponding month of 1920. In both June and July, on the other hand, the ton mileage was smaller than in the corresponding months of 1920. Indeed, although there is the same number of days in May and July, and although traffic in July usually is larger than that in May,

the July traffic this year actually was somewhat smaller than that of May. In the first five months of 1920 the number of tons carried one mile was approximately 155,500,000,000, while in the first five months of 1923 it was approximately 170,500,000,000. On the other hand, in June and July, 1920, the total ton mileage was more than 72,000,000,000, while in June and July, 1923, it was less than 69,000,000,000.

The statistics of car loadings indicated that freight business continued to break records in June and July, but these statistics do not allow for changes in the average loading per car, which has been less this year than in 1920, or for changes in the average haul per ton, which also has been slightly less than in 1920. The number of tons carried one mile is the true measure of total freight business, and the decline in business disclosed by these figures, when in view of past experience an increase was expected, is the principal explanation of the decline which occurred not only in the percentage of return earned, but also in actual net operating income, which exceeded $90,000,000 in May and was only $84,600,000 in July.

The trend of traffic during the summer months shown by these statistics raises questions as to whether, when the year is finished, it will be found that the total business of the year has been a record-breaker and as to how satisfactory the total net return earned will prove to have been. The only statistics for August available are those for car loadings and for earnings, expenses and net operating income. Total earnings in August were about $561,500,000, which exceeded the total earnings of any month since November, 1920, and was about $26,000,000 greater than the earnings in July of this year. The net operating income earned in August was about $98,400,000, which is the largest amount of net earned in any month since October, 1917. But it is not equal to the net operating income earned in August, 1917. In fact, while the total net operating income earned in the first five months of the present year exceeded that of 1917 the amount earned in June, July and August was less. The result was that in the first eight months of this year the total net operating income earned, amounting to $625,000,000, was more than $11,000,000 less than that earned in the first eight months of 1917. When it is considered that in the last six years a large amount of investment has been made in railroad properties, it will be seen that the net return earned has been relatively much smaller than it was in the last year before government operation was adopted.

Total car loadings have continued to increase down to the latest date for which the information is available, having been 1,097,274 car loads in the week ended September 29, the highest figure ever reached. But for reasons already stated, the loading figures do not indicate with perfect accuracy the amount of freight business handled. It seems a reasonably safe inference from the information now available that the business now being handled is approximately as large as in the fall of 1920, but that it is little if any larger, and that the business of the last six months of this year will not be relatively as large, or the net operating income earned as satisfactory, as in the first six months of the year.

If this should be the outcome the railways will have handled at least as large a traffic as in any year in history, and will have failed, even with this large volume of business to earn the amount of net return to which the Interstate Commerce Commission has held they are entitled; and it is a well known fact that thus far this year the railways of western territory have not done as well financially as those of the rest of the country.

In view of the situation indicated, what attitude will the Interstate Commerce Commission and Congress assume toward demands for reductions of rates which are being made, especially in western territory? The commission held the railways were entitled to earn at the rate of 6 per cent on their valuation up to March 1, 1922, and subsequently at the rate of 5¾ per cent. They earned only 3⅓ per cent in 1921 and only 4 per cent in 1922, when traffic was relatively light. If they are entitled to earn an average of 5¾ per cent, then it is evident that in years such as 1923, when business is good, they must earn more than this to offset the deficiency of net return incurred in years when business is bad. The net return earned thus far in 1923 is, of course, much more satisfactory than the returns earned in 1921 and 1922, but it cannot be regarded as highly gratifying in view of the fact that it has been derived from such a large business.

Nobody can foresee whether railway business is going to increase or decline, but its trend since the middle of the year has not been altogether encouraging. The operating expenses and taxes of the railways thus far in this year of heavy business have consumed almost 85 cents out of every dollar they have earned. It is evident, therefore, that any considerable decline of business would make their net operating income much less than the commission has held they are entitled to earn, and that if a decline of business should be accompanied by a reduction of rates they might soon find themselves back financially where they were until a year ago.

The railways are earning only a very modest return now. In the three years ended September 1 they were entitled to earn, under the rulings of the Interstate Commerce Commission, a net operating income of about $3,300,000,000, but they actually earned only about $2,200,000,000, or about $1,100,000,000 less than the commission held they were entitled to. The average return earned during these three years was at the rate of only about 4 per cent on their tentative valuation. In spite of the small return earned they are going ahead making all the additions and improvements they can and handling the traffic of the country more satisfactorily than in any period of active general business in the last 10 years. In view of all the facts there is no warrant for any action in the near future by either the Interstate Commerce Commission or Congress that would tend to reduce rates and the net return earned. Any such action might be disastrous directly to the railways and indirectly to the nation.

Give More Help to the Superintendent

THE FORMS of organization provided by American railroads for the conduct of maintenance-of-way operations in this country follow several widely diversified schools of thought. Leaving out of consideration the strictly departmental organization which is followed by only a limited number of roads, the principal difference is to be found primarily in the degree of supervision exercised by the trained engineer. On the one hand are those roads on which the authority of the engineer is strictly established through provision for a division engineer directly in charge of all expenditures for the maintenance of way and structures. On the other are those upon which the work is conducted by supervisors of track and bridges and building reporting to the division superintendent whose supervision is supplemented in some measure by general engineering or maintenance-of-way officers.

The relative merits of these two forms of organization have been discussed frequently and presumably the subject has been pretty well exhausted. It would seem well, however, to call attention to the disadvantage of the organization in which the work is not under the direction of a division engineering officer. In the absence of the division engineer, the responsibility for the bridges falls almost entirely on the bridge supervisor, who is required to inspect all of the struc-

tures with sufficient frequency to insure that they are maintained in proper condition. True, he receives a considerable degree of supervision from the bridge engineer and his staff primarily with respect to the adequacy of the steel bridge spans, since this cannot be judged without a greater knowledge of bridge engineering than that possessed by the average master carpenter. The bridge engineer is also expected to exercise a check on the supervisor as regards other problems arising with respect to the safety of the structures; for example, the adequacy of the waterways. But, except in the case of roads of limited mileage it is impossible for him to acquire enough familiarity with the detailed conditions at each bridge to pass thorough judgment on such matters or to exercise the minute supervision necessary to insure that all is as it should be.

This emphasizes the advantage of supervision of such matters by a division maintenance officer with a territory sufficiently limited to enable him not only to exercise an adequate check on the work of the supervisor, but also to bring into effective play a degree of judgment founded on engineering training which cannot be expected of the average supervisory officer. A division engineer should be able to see the problem in a larger way. He can discern opportunities for improving conditions through changes of line or grade, or through the diversion of waterway channels. Moreover, his superior education enables him to present his plans for improvement in a manner that is much more likely to receive serious attention from the management than could be expected of his subordinate.

The supervision of the maintenance of both tracks and structures by supervisors reporting to the superintendent comprises the oldest and most common form of organization on American railroads, and on the whole, it may be said to have stood the test of long-established custom. There is also no denying that on many railroads or parts of many railroads, it comprises the most effective and economical form of organization to be maintained. But times are changing. The increased burden placed on the superintendent by the exacting requirements of transportation and the obligation imposed on him to devote a large portion of his time in promoting the relations of the railroad with the public and the shippers, make it impossible for him to devote as much time to matters of maintenance of way and structures as he did in years gone by. There are many divisions, therefore, where the superintendent requires the assistance of a division maintenance officer, not only to insure adequate supervision of maintenance-of-way matters, but to afford him opportunity to devote the greater measure of his time to the other exacting responsibilities imposed on him.

New Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Japan After the Earthquake, by F. R. Eldridge, Jr. Railroad and equipment losses estimated, p. 2. U. S. Dept. of Commerce Trade Information Bulletin No. 147. 9 p. Published by Government Printing Office, Washington.

Record of Political Events [from July 1, 1922 to June 30, 1923], by Harry J. Carman and Elmer D. Graper. Especially useful for dates and succinct summaries of important decisions and events affecting railroads. Supplement to Political Science Quarterly, September, 1923. 128 p. Published by Academy of Political Science, Columbia University, New York City.

Smith's Further Facts on Locomotive Running and Breakdowns, by C. Robert Smith. Questions and answers to aid those preparing for examinations. 394 p. Published by author, Louisville, Ky.

Supplying Drinking Water on Trains Operating in Interstate Traffic, by Arthur E. Gorman. Edition of 1923. Reprint No. 759 from U. S. Public Health Reports. 10 p. Published by Government Printing Office, Washington.

The Background of Economics, by Merlin H. Hunter and Gordon S. Watkins. Transportation discussed in Chapter 35, "Water transportation," Chapter 36, "Land transportation and communication," and in Chapters on labor. 514 p. Published by McGraw-Hill Book Co., New York.

The Economic Pinch, by C. A. Lindbergh. Contains attack on Transportation Act and Interstate Commerce Commission. Author is former congressman from Minnesota. 249 p. Published by Dorrance, Philadelphia.

Interstate Commerce Act and Other Federal Statutes of Particular Interest to Railroad and Industrial Traffic Men. 96 p. Published by Traffic Service Corporation, Chicago, Ill.

The New Capitalism, by S. A. Baldus. "The Railroads: an object lesson in overcapitalization," Chapter 11. 489 p. Published by O'Donnell Press, Chicago.

The Worker in Modern Economic Society, by Paul H. Douglas, Curtice N. Hitchcock, and Willard E. Atkins. Railroad brotherhoods—organization and policies, p. 552-554, Railroad Labor Board, p. 901-906. 929 p. Published by University of Chicago Press, Chicago, Ill.

Periodical Articles

British Plans for Relieving Unemployment, by Charles E. Lyon. Government, industrial group, and labor plans include expansion of transportation facilities, the last two advocating extensive electrification. Commerce Reports, October 8, 1923, p. 125.

The Farmer At the Crossroads. Has He Reached a Crisis That Endangers National Prosperity? by Orville M. Kile. "Freight rates are high and must remain high until some radical change is made in our transportation system," p. 75. McClure's Magazine, October, 1923, p. 73-78.

New Control for Alsace-Lorraine Railroads, by Chester Lloyd Jones. As adopted since reincorporation into French systems. Commerce Reports, October 1, 1923, p. 51.

The New Frontier in Thrace, compiled by Col. Laurence Martin. Importance in foreign affairs of the railway station serving Adrianople. Foreign Affairs, September 15, 1923, p. 99.

Public Utility Securities. Summary of fate of railroad and utility bonds since 1914. World's Work, October, 1923, p. 659-660.

Three Examples of International Coöperation, by Thomas W. Lamont. Economic reconstruction in Austria, Mexico and China, including what was done and not done to the railroads. Atlantic Monthly, October, 1923, p. 537-546.

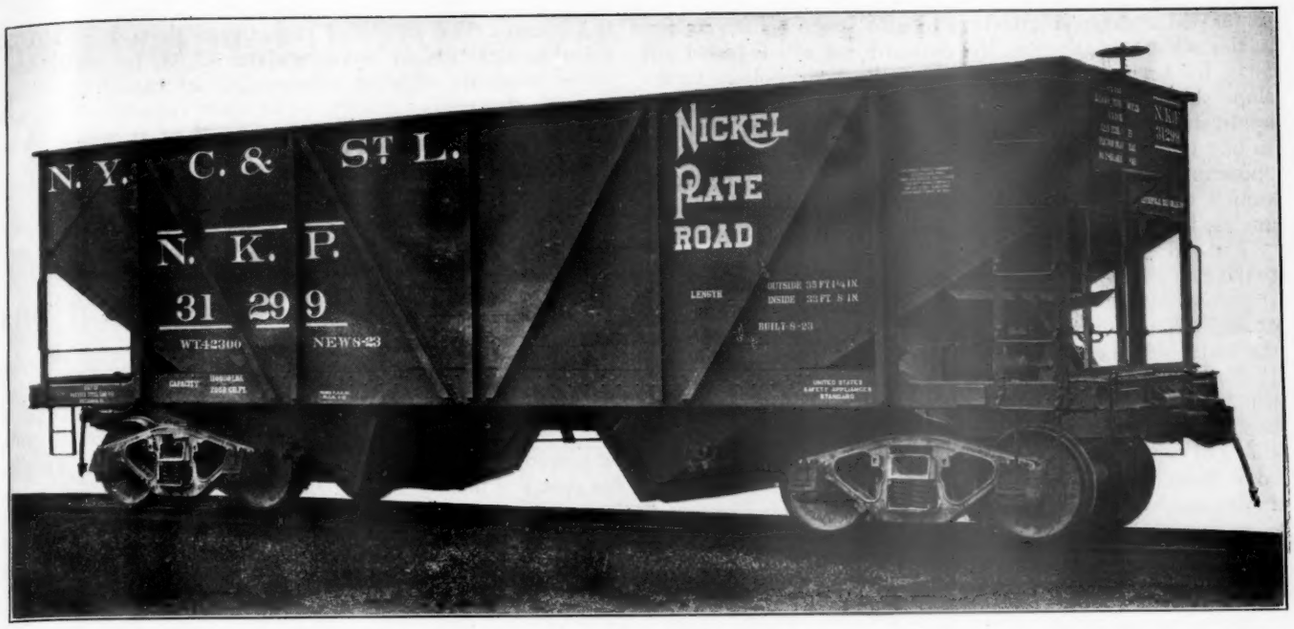
An Analysis of Strike Statistics, 1881-1921, by Paul H. Douglas. Numbers of strikes, strikers, unionists, non-unionists, industries affected and so on in five-year periods, and conclusions drawn therefrom. Journal of the American Statistical Association, September, 1923, p. 866-877.

The Essential Facts of Railroad Valuation, by T. H. Sanders. Harvard Business Review, October, 1923, p. 60-65.

Locomotive Freight Tonnage Ratings, by W. U. Appleton. A general outline of methods followed in utilization of existing data to establish tonnage tables. Engineering Journal [of Canada], October, 1923, p. 445-450.

Railroad Transportation and Railroad Terminals—A Symposium. Fifteen papers on important railroad questions, and terminals in St. Louis and Chicago. Proceedings of the American Society of Civil Engineers, September, 1923, p. 1405-1606.

Valuation and Rate Regulation, by W. M. W. Splawn. Journal of Political Economy, October, 1923, p. 675-707.

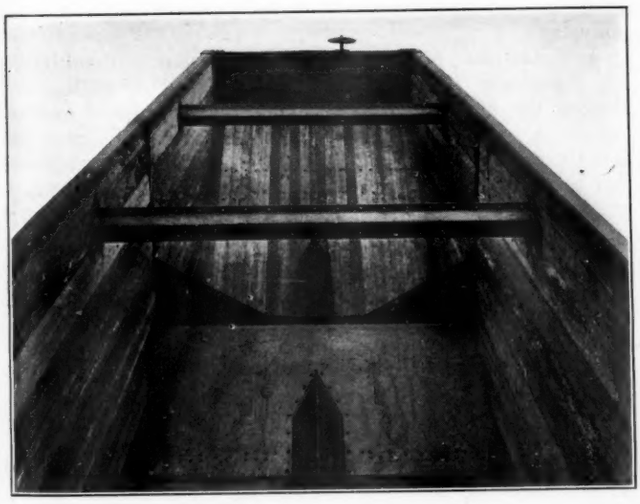


New York, Chicago & St. Louis Hopper Car. Built by the Pressed Steel Car Company

Composite Hopper Cars for Nickel Plate

Reduction in Building and Maintenance Costs Achieved by the Use of Wooden Sides and Flooring

THE NEW YORK, CHICAGO & ST. LOUIS has recently had 1,000 composite hopper cars completed by the Pressed Steel Car Company, McKees Rocks, Pa. Cars of this type have been in use on this road over a period of five years. The original design was developed in 1916, at



Interior of the Completed Car

the request of J. J. Bernet, president of the N. Y. C. & St. L., to avoid the use of steel as far as possible on account of the high price and scarcity of steel that prevailed at that time and having in mind also the heavy maintenance of all-steel cars due to corrosion. During the time that the original cars have been in use, the maintenance has consisted chiefly of repainting the steel parts.

There were 750 cars built according to the original design. The only important changes made in working out the design for the new cars were increases in the length and height to obtain greater cubic capacity. The inside length was increased from 30 ft. to 33 ft. 8 in., and the height from the bottom of the side sill to the top side angle was increased from 7 ft. 3¼ in. to 7 ft. 11¼ in. Friction draft gears were applied to conform to recommendations of the American Railway Association and some slight reinforcements of center sills and body to compensate for the increase in length were also made. The distance between the truck centers was increased from 21 ft. 9 in. to 24 ft. 9 in., which increased the total distance over the striking plates from 31 ft. 11½ in. to 35 ft. 7½ in. The design of the truck side frames was changed also to conform to present practice. These changes effected an increase of 390 cu. ft. and 19,800 lb. in the capacity of the car, when loaded with soft coal.

Design Similar to All-Steel Construction

The construction of the cars, from the side sill down and including also the center sills, center sill crossridge and the entire ends of the cars, is the same as commonly used in the construction of all-steel hopper cars. The essential difference is the application of wooden sides and flooring to the steel frame. The superstructure consists of an all-steel frame to which planks for side wall and flooring have been bolted. Replacement of the wooden sides and flooring with steel can readily be accomplished without otherwise making any changes in the car, except, possibly, the removal and replacement of some of the rivets through the framing. To avoid corrosion as far as possible, copper-bearing steel is used for all sheets exposed to coal loading.

Underframe Construction

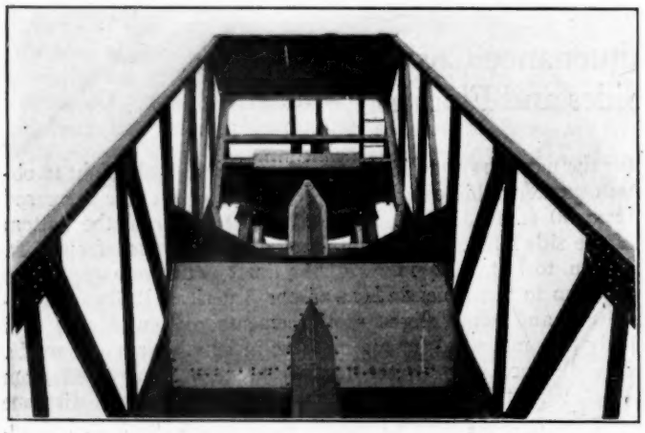
The center sills consists of two through 15-in., 55-lb. channels, 34 ft. 8¼-in. long spaced 12-⅞ in. apart. No cover plate is applied, but reinforcement is obtained by means of three corrugated pressed steel lateral stiffeners, two 2 ft. 4¼ in. from the center line of the body bolster and one at the

center of the car, respectively, and also at the bottom by two angles which extend from the outward end of the center sill 50⅞ in. beyond the center line of the body bolster to the slope sheet of the hopper. This bottom angle overlaps the application of the hopper inside sheet and the center sill cover so that the center sill is considered as reinforced to an extent approximately equal to that of a top cover plate. The cross-section of center sills, not including the bottom reinforcing angles, is 32.36 sq. in.

The end sills are made of 8-in., 11½-lb. channels fastened to the side sills and reinforced by angles extending diagonally from the outside corners to a 5/16-in. angle section which extends from the outside corners to a cover plate connecting the body bolster and draft sills. The side sills consists of ¼-in. plate, flanged at the bottom, with vertical sides, to which the side posts and side post braces are riveted. The hopper and the floor framing are riveted directly to the side sills and center sills, thus giving the necessary stiffness. The body bolsters consist of ¼-in. plate reinforced by 5/16-in. angles and by ½-in. top and bottom cover plates. The center plate casting is riveted directly through the center sill channels to the bolster.

Side Framing

The sides are built of 2¼-in. by 10-in. shiplap siding bolted to a framework of 3-in., Z-bars. In order to facilitate interchangeability from wood to steel, the side planks are cut to reach from the end to the center of the center side post. A ¼-in. copper-bearing steel plate is used as a splice and extends from the top side bulb angle down to the cross ridge gusset. The distance, from the bottom of the side sill to the top of the top angle, is 7 ft. 11¼ in. and the total height from the top of the rail is 11 ft. 2⅝ in. These measurements are 6⅝ in. above that of the U.S.R.A. standard hopper cars of all-steel construction. Each of the side posts is riveted directly to the side sill and braced as shown in the illustrations. The end sheets are copper-bearing steel, riveted to the corner post angles. The top side member is a bulb angle, commonly used on all-steel cars.



View of Car Before the Wooden Flooring and Side Walls are Applied

Flooring

The same size shiplap used for the sides is also used for the flooring and is bolted to the frame in much the same manner as an all-steel floor would be riveted. The hoppers and hopper doors are constructed of copper-bearing steel to prevent corrosion. With the single exception that the sides and flooring are of wood, the general interior appearance is the same as any ordinary hopper car.

The trucks have box section, cast steel bolsters and cast steel side frames with the journal boxes cast integral with the frame. The stencilled capacity of the car is 110,000 lb. The light weight averages about 42,300 lb., which compares favorably with an all-steel hopper car of equivalent strength and cubic capacity. The cubic capacity of the new cars is 2,050 cu. ft., level full, and 2,295 cu. ft. with a 10-in. heap.

Western Railway Club Discusses Employee Relations

AT A MEETING of the Western Railway Club in Chicago October 15, Henry Bruere, fourth vice-president of the Metropolitan Life Insurance Company and a director of the Chicago, Rock Island & Pacific, gave a lecture on employee and public relations on the railroads. During the past few months Mr. Bruere, together with his assistants, has made an extensive study of employee conditions on different railroads with the purpose of formulating a definite program to be carried out in securing more loyal spirit and co-operation among employees and at the same time assuring the employees of a square deal from the managements. Mr. Bruere pointed out that the railroads employ more men than any other one industry and that these 2,000,000 employees with approximately 8,000,000 dependents form a group that if properly cared for and instructed will be able to influence the general public to the needs of the railroads and thus build up good will that can be secured in no other manner quite as well.

In the discussion following the lecture C. H. Markham, president of the Illinois Central explained that the Illinois Central was endeavoring to secure closer co-operation from all employees of the system by impressing the entire staff of officers and foremen with the idea that they constituted the equivalent of a personnel department. Mr. Markham said that the first requisite to secure loyalty is to provide efficient tools, track facilities, terminals, etc., in order to eliminate waste of effort and dissatisfaction. Railroading, he said, holds better opportunities today than ever before, and every man has a right to be proud of his position in the railroad industry.

J. E. Gorman, president of the Rock Island, in continuing the discussion, stated that the shop strike of 1922 had evidenced the great need of securing the confidence and co-operation of employees. It was his idea that the men had left their work, not so much because of wages or conditions, but because of a lack of realization of their duty to the railroads and to the public, and that a proper spirit can be built up only by a sincere study of methods which will show the employee how important his work is in the general public welfare. For this reason the Rock Island has recently formed a personnel department, not for the purpose of employing or discharging men, but rather to be of personal service to the employees. Mr. Gorman explained that this move was taken largely on account of the excellent results that had actually been accomplished during the past few years and especially mentioned that the work done at the Silvis, Ill., shops by T. C. Straw, a Y. M. C. A. representative, had been a deciding factor in controlling the situation at that point.

Mr. Straw responded by pointing out that during the last few days scores of men had come to him with personnel problems or slight grievances regarding conditions in the shop and that he was able to eliminate considerable differences that might in time accumulate and cause trouble for the road.

He said that now as never before, the men were anxious to do their part and that the managements should be awake to the opportunity to promote good will.

Sir Henry Thornton on Government Ownership

Tells New England Traffic Club That Disregard of Employees or Earnings Will Bring It

SIR HENRY WORTH THORNTON, chairman and president of the Canadian National Railways, addressed the Traffic Club of New England in Boston on October 16 on the subject of Government Ownership, at the club's first meeting of the season. F. B. Carvel, chief commissioner of the Board of Railway Commissioners of Canada, spoke on Canada's railway problem.

"State ownership of railways is not a new thing," said Sir Henry in opening his address, "in fact it is well nigh threadbare." He explained that government ownership had never resulted from a well-thought-out plan, but that wherever it existed had been adopted for some special reason, usually military or because privately owned railways could not give the service required of them.

During the war, he said, some sort of government control was necessary in most countries for military reasons, and since the war with the consequent downward tendency in net receipts the subject has been mooted more and more. Unfortunately, he continued, most of those who discuss the subject of government ownership do so with a definite prejudice regarding it; some of them are mere theorists with no practical knowledge; and there are others who bring up the subject among others because they feel themselves divinely appointed to settle all the problems of society. There are, on the other hand, a few who really approach the subject without prejudice and with a background of knowledge and who are really trying to look at the situation from a point of view of the country as a whole. Every plan, he said, has its advantages and disadvantages and what is needed is a cool examination of these advantages and disadvantages to see which carry the greater weight; and once this has been determined to make an honest judgment from the findings.

Urges Study of England's Experience

He urged a study of England's experience with her railways during and since the war as an indication of some of the steps which might be taken on this continent. The railways of the United Kingdom were taken over by the government at the beginning of the war, but the government's administration consisted of an executive committee composed entirely of railway general officers. These officers dealt only with matters of interest to all the railways, and the management of each railway was left in the hands of its own general manager. England's war time railway administration differed from that in this country in that it was left in the hands of "those suspected of some knowledge of the business" —in the words of Sir Henry.

Practically the only interference which the railway managers experienced in the hands of the government during the war was that in being compelled to deal with the labor unions in a very liberal manner. Sir Henry said that he thought at the time that the wage increases and improvements in working conditions granted to the employees were too liberal, but that he has since changed his mind and believes that they were wisely granted.

British Government Liberal With Railways

The government had guaranteed to recompense the railways during the war period sufficient to maintain the net earnings as of the year 1913, plus any shortage of maintenance (to which shortage of maintenance was to be added 15 per cent). The government fulfilled this obligation and, in addition, in order to pay for any other loss which it had occasioned for the railways, made an additional payment to them of £60,000,000.

In 1921, the British Parliament passed a new railway act, which provided, among other things, for consolidation of all the railways into four non-competitive groups. In addition, a Railway Rates Tribunal was set up with the mandate to allow rates which would provide the railways with a net return as large as that earned in 1913. Consolidation, it was felt, was necessary in order that the rates fixed by this tribunal should give an adequate return to *all* the railways. In addition, it was believed that consolidation would eventually bring substantial economies in operation and would do away with wasteful competition.

Sir Henry said that he believed the step which England had taken to have been a wise one and the only step that could have been taken except government ownership. Thanks to the fairness of the British government in dealing with them, these railways are at the present time in excellent physical condition, are well able to meet all the demands made on them and are giving excellent service to the people of Great Britain.

Three Essentials of Railway Success

Sir Henry said that there were three essentials of successful railway operation, viz.:

1. Adequate net returns on the investment.
2. Sufficient capital—which can only be supplied by adequate net returns, making possible an efficient transportation system charging reasonable rates.
3. Fair wages and working conditions, making for a contented body of employees.

It can be taken as axiomatic, he said, that if all these conditions do not obtain, government ownership must follow.

In Canada, he said, they had government ownership of some of their lines, but *not* government operation. The government had to take over these railways to keep them in efficient operation, but it very wisely turned over their actual operation to a board of directors organized in the same manner as such a board would be in a private organization and with an executive, the same as any private railway.

He spoke of the tendency toward decreased net and said that in the United States wages could not continually be increased without eventually involving the railroads in considerable difficulty. "I am not saying," he said, "that wages are too high." Every industry must pay a wage sufficient to allow its employees to live comfortably in sanitary conditions and to provide educational facilities for their children. The question of employee relationships is closely connected with government ownership, he said, because if a railway cannot solve this problem there would be agitation for government ownership.

Too Few Employers Know How to Deal With Men

Trade unionism, he said, arose first in England where it was brought about by the rapacity of employers who gave no consideration whatever to the needs or aspirations of their employees. Sir Henry asserted that if he had been a workman in those days he too would have been a trade unionist and, if possible, a trade union leader. Since that day we have always had a labor problem and it has never been entirely solved.

"Too often financiers in selecting executives to operate their properties for them," he said, "do not consider the tem-

perament of these men and their ability to deal with their subordinates and employees." The greater part of any man's time, he said, is spent in relations of one kind or another with other human beings and yet there is no college or other educational institution which gives adequate instruction in this most important of all subjects. A knowledge of mankind and particularly of those who toil, is an absolute essential in the successful operation of any enterprise.

Whether or not government ownership comes, he said in conclusion, partly depends upon adequacy of earnings and the sufficiency of capital, adequacy of service to the public at reasonable rates and the success of the railways in meeting the needs and aspirations of their employees.

Address of Chief Commissioner Carvel

Mr. Carvel opened his address with an expression of regret that, occupying a quasi-judicial position, he could not speak as frankly as he would like to. He spoke briefly on Canadian railway history, telling how the Canadian Pacific was built as a business proposition from the very start and how the Canadian National had resulted from a consolidation of lines which were built for development purposes and which the government took over rather than permit them to cease operation. He praised Mackenzie and Mann, the promoters of the Canadian Northern, who he said had been much maligned because of the financial failure of their enterprise. He said that Canada needed the railways they built for development purposes and without their hard work and enthusiasm would never have had them. He gave as another reason for the adoption of government ownership in Canada the fact that the Dominion did not want the railways to default on their bonds, thus injuring Canadian credit. He spoke of the constant improvement in the financial condition of the Canadian National and praised the efficiency of the Canadian Pacific.

"What Didn't McAdoo Do to Canada!"

In emphasizing the effect which railway rates and wages in the United States had in Canada, he exclaimed, "What didn't McAdoo do to Canada?" He continued to express the belief that with the constant demand of labor for higher wages and the equal persistency of the public in seeking lower rates his commission was in a quandary as to how to secure enough money from the public to keep the railways going. He expressed a belief that railway wages and railway rates should be fixed by the same tribunal so that a commission fixing wages could not fix them without taking into account where the money was to come from to pay them. He spoke of the Crows Nest Agreement (see *Railway Age* of October 13, page 673) and the effect that it had on the railway earnings. He praised the co-operation shown between railway and industrial traffic men typified by the Traffic Club of New England, and expressed the belief that his commission in Canada would have considerably less work to do if the same spirit of co-operation were shown there. He explained that government ownership in Canada did not mean the kind of operation experience in the United States in the regime of Mr. McAdoo, and closed his address by a mild protest against the tariff, which, he suggested, was injuring trade between the United States and Canada.

THE UNION PACIFIC for sixty days has been running locomotives on passenger trains, through, between Kansas City, Mo., and Denver, Colo., 640 miles, where four engines had been required. Prior to the change four light Pacific type locomotives were used on 15-coach trains with changes at Junction City, 140 miles from Kansas City; Ellis, 163 miles farther, and Sharon Springs, 127 miles; thus leaving a run of 210 miles into Denver for the fourth locomotive. The light type Pacific engine has been replaced by a heavy type.

Progress on the A. R. A. Transportation Program

WASHINGTON, D. C.

THE RAILROADS had more than attained by October 1 one of the principal objectives set in the program to provide adequate transportation for 1923, adopted on April 5, in addition to handling a greater volume of traffic than was expected at that time. The monthly progress report published by the Car Service Division of the American Railway Association as of October 1 shows that the number of locomotives awaiting heavy repairs had been reduced to 8,789, or 13.7 per cent, as compared with an objective of 15 per cent. The number of locomotives awaiting both heavy and light repairs was 15.3 per cent of the number on lines as compared with 24.1 on January 1 and 16.5 on September 1. The number of freight cars awaiting repairs had been reduced on October 1 to 6.7 per cent as compared with the objective of 5 per cent. However, this represents a considerable reduction during the year, as the percentage was 9.5 on January 1 and 7.7 on September 1. The tons of railroad fuel stocks on October 1 amounted to 17,663,448 as compared with 16,365,693 on September 1. The figure for the average tons per loaded car is thus far available only for the month of August, when the average was 28.6 as compared with an objective of 30 tons by October 1. This represents an increase as compared with 1922, when the average was 26.3, and as compared with August, 1921, when the average was 27.4. The average miles per car per day for the month of August was 28.1 as compared with an objective of 30, but this also represents a large increase over the two previous years. In August, 1922, the average was 21.7 and in August, 1921, the average was 22.7.

Cars of revenue freight loaded for the 39 weeks to September 29 totaled 37,308,891 cars, an increase of 19 per cent over 1922, 28 per cent over 1921 and 10 per cent over the corresponding period of 1920. The loading of 1,097,274 cars for the week ended September 29 established a new record, exceeding the previous peak week of September 1 by 4,707 cars. Following is the cumulative loading by commodities for the 39 weeks of 1923 compared with the corresponding period of previous years.

	1923	1922	1921	1920
Grain and G. Pro.....	1,655,790	1,780,352	1,734,641	1,378,975
Live Stock.....	1,278,716	1,139,882	1,081,769	1,138,477
Coal	7,208,024	4,913,566	5,882,458	7,291,907
Coke	568,699	332,429	230,788	463,907
Forest Products.....	2,853,961	2,146,991	1,859,831	2,384,058
Ore	1,880,499	1,217,896	759,788	1,851,350
Mdse. L. C. L. & Misc....	21,863,202	19,775,982	17,585,872	19,279,891
Total	37,308,891	31,307,098	29,135,147	33,788,565

The situation as shown by the report is as follows:

NEW EQUIPMENT PUT IN SERVICE AND ON ORDER

Cars	Put in Service January 1 to October 1, 1923	On order October 1, 1923
Box	52,963	28,477
Refrigerator	17,218	5,204
Coal	55,575	26,541
Stock	3,727	2,794
Flat	3,192	1,360
Others	1,961	225
Total	134,636	64,601
Locomotives	2,963	1,242

ALL FREIGHT CARS AWAITING REPAIRS—1923

	January 1		September 1		October 1	
Class of repair	Cars	Per cent	Cars	Per cent	Cars	Per cent
Heavy	164,041	7.2	137,229	6.0	118,563	5.3
Light	51,970	2.3	38,098	1.7	32,769	1.4
Total	216,011	9.5	175,327	7.7	151,332	6.7

STEAM LOCOMOTIVES AWAITING REPAIRS 1923

	January 1		September 1		October 1	
Class of repair	Locos.	Per cent	Locos.	Per cent	Locos.	Per cent
Heavy	13,587	21.1	9,392	14.7	8,789	13.7
Light	1,962	3.0	1,125	1.8	1,034	1.6
Total	15,549	24.1	10,517	16.5	9,823	15.3

TONS OF RAILROAD FUEL STOCKS—1923

	January 1	September 1	October 1
Tons in cars	2,443,460	2,276,043	2,058,033
In stocks piles	4,313,426	14,089,650	15,605,415
Total	6,756,886	16,365,693	17,663,448

AVERAGE TONS PER LOADED CAR

Month	1923	1922	1921
January	29.0	27.6	30.2
February	28.2	28.3	28.4
March	27.9	27.7	27.2
April	27.6	24.4	26.9
May	28.0	25.0	27.8
June	28.2	25.4	27.7
July	28.5	25.0	27.5
August	28.6	26.3	27.4

AVERAGE MILES PER CAR PER DAY

Month	1923	1922	1921
January	25.8	20.4	23.2
February	24.8	23.2	21.3
March	27.0	24.4	20.9
April	28.0	21.3	20.6
May	28.6	22.6	21.3
June	28.3	23.9	22.0
July	27.9	20.9	21.6
August	28.1	21.7	22.7

Suggested Design for a 4,000 h.p. Passenger Locomotive

By H. A. F. Campbell

THE WRITER has had the opportunity for many years to study closely the locomotive designs not only of America but of Europe. A well-known French locomotive power man stated to me that in conception of design the American engineer led the world but that in execution of manufacture, perhaps, he left considerable to be desired. However, I feel that this European engineer was not giving himself full justice because there is little that the European engineer, at one time or another, has not tried and perhaps given up. It is certain that in detail and skill of design the European need make no apologies, his locomotives continue to hold the world's records for power developed per unit of weight, in conjunction with the lowest steam and coal rates per indicated horsepower.

Bigness and weight sound well, but usually will not bear close analysis. Considering the present tendency of our operating and traffic conditions the following question is of interest and no doubt has several answers. Within the present loading gage, weight of roadbed and strength of bridges as found in the United States, is it going to be possible to design, operate and maintain a passenger steam locomotive that will develop *continuously* 4,000 i. hp. and at the same time be an operating possibility?

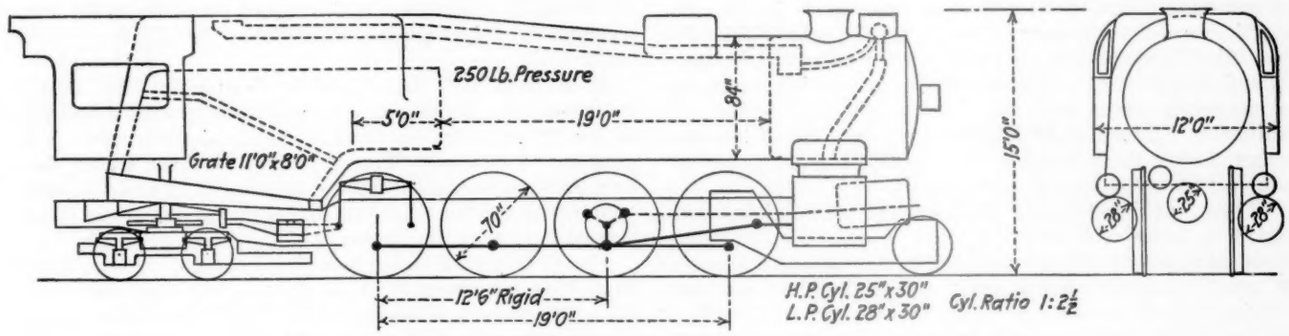
We have a Pacific type locomotive with 210,000 lb. on drivers which has developed on the test plant at Altoona, Pa., continuously 3,000 i. hp. We have a Mountain type locomotive with 230,000 lb. on drivers which has developed on the Union Pacific 3,500 i. hp., for a short period. But both of the above engines, considering the type in relation to the design, represent about their limit. What will be the type of passenger steam locomotive to develop continuously 4,000 i. hp.? It will not be a Pacific nor a Mountain type, nor will it be a two-cylinder simple locomotive.

Within the given space it is necessary to produce more power per unit of heat, while at the same time reducing the steam consumption per unit of power. This is absolutely necessary in order to keep the evaporation and the production of the steam that will be required within the possibilities of our track and loading gage.

Furthermore the engine must have a good ratio of weight to power, 100 lb. weight per i. hp. or less. Also it is always necessary that the engine be an operating proposition, that is, low in upkeep both of itself and of the roadbed.

The writer would propose the following type: A three-cylinder compound, superheater 2-8-4 type, tender locomotive as shown on the sketch herewith. This locomotive should have the following principal dimensions and ratios, and is designed and recommended as the type that will produce 4,000 i. hp. continuously on 15 lb. of water per i. hp. per hour and will weigh not over 100 lb. per i. hp. and is its own Booster at starting.

1-High pressure cylinder	25 in. diameter
2-Low pressure cylinders	28 in. diameter
Stroke	30 in.
Diameter drivers	70 in.
Boiler pressure	250 lb.
Type of boiler	Belpaire wagon top
Heating surfaces:	
Firebox, syphons and comb. chamber	500 sq. ft.
Tubes and flues	4,500 sq. ft.
Total evaporation	5,000 sq. ft.
Superheating	1,000 sq. ft.
Grate area	88 sq. ft.
Weights in working order:	
On front truck	30,000 lb.
On drivers	260,000 lb.
On trailing truck	75,000 lb.
Total locomotive	365,000 lb.
Max. tractive force at starting, 60 per cent boiler pressure	70,000 lb.
Max. tractive force compound, 85 per cent boiler pressure	42,000 lb.
Max. i. hp.	4,000 lb.
Ratio cylinder volumes	1 to 2½
Equivalent two-cylinder cross-compound	25 in. high, 40 in. low
Ratio firebox to total heating surface	1 to 9



Outline of Proposed 4,000 hp. Passenger Locomotive of 2-8-4 Type

Ratio grate area to total heating surface	1 to 57
Factor of adhesion at starting	3.7
Factor of adhesion, compound	6.2
Weight of locomotive per each i. hp.	91 lb.

Belpaire firebox.
Syphons in firebox.
Superheater.
Stoker.
No dome, perforated dry pipe.
Throttle on top of steam box.
Front truck and first driver combined in a Zara or Krauss truck.
Reciprocating parts balanced.
No excess balance in driving wheels.
Independent valve gear for each cylinder.

Outside main rod	108 in. long
Inside main rod	126 in. long

It is to be noted that a stroke of 30 in. has been used. At 50 m.p.h. the revolutions per min. would be 240, and the piston speed 1,200 ft. per min. Some maintain that the best economy, as well as the maximum power, are obtained at a piston speed of about 1,000 ft. per min. This is not only a misstatement, but it is not correct. The power and

the economy would be increased if we should make the piston speed 1,500 or 2,000 ft. per min., provided we could design a valve gear and valves that would maintain a correct steam distribution. With our present valve gears, low revolutions per minute, that is, few reciprocations of the valves per minute is the important point to keep in mind. High piston speed in itself is no detriment.

For passenger locomotives of very high power it is not going to be an operating proposition, acceptable either to the roundhouse man or the roadway man, to develop this power in only two cylinders, nor will the wheel arrangement of our present locomotives permit a firebox of large enough capacity. It will be necessary to use three cylinders and every effort should be made successfully to compound these cylinders. This necessitates the use of a crank axle, but a one-throw crank axle of the built-up type will last as long as the straight axle. This three-cylinder locomotive will be a balanced engine; it will have practically no nosing, which is a reason why a pony truck leading, whether combined or not with the leading driving wheel, with four flanged drivers following will be a perfectly safe high-speed proposition. All the different features in this proposed locomotive have been tried out and found thoroughly sound. They have not, however, been combined into one locomotive. The object of this article is to show the advantages of so doing. The 2-8-4 type, three-cylinder, compound locomotive is a sound and practical proposition.

Secretary Hoover Holds Super Power Conference

A SUPER POWER CONFERENCE was called by Secretary Hoover in New York on October 13. The purpose of the super power development is to provide better and cheaper electric power for industries, homes and railroads in the New England and Middle Atlantic states. Mr. Hoover took pains to state that the conference is not conceived as more government in business. He said, "The public authorities are already deeply in the power business through many forms of regulations and a very large measure of control of power sources. The thought here is that coordination between public authorities and industries may secure further consummation of a great advance in the development of great service to the public.

"There are time-honored disputes over states' rights with regard to water and somewhat similar questions are being raised as to power. It is not probable that an embargo could be constitutionally placed upon power flow across state frontiers but unco-ordinated legislative and regulative actions by the states and national government might amount to economic embargoes and discriminations and thus stifle development. The projected water power development of the St. Lawrence river which would provide the United States with about 1,200,000 hp. can only be consummated by co-operation of the federal government." It is problems like these that Mr. Hoover feels should be worked out by the super power conference.

With regard to railroads, Mr. Hoover says, "With the crowding of our population in large areas, we are faced with most difficult questions in the development of terminal facilities, the handling of traffic on our railways. There has been some electrification of transportation. The engineers who have made systematic super power surveys are convinced that over 40 per cent of the mileage of the railways in this territory could be electrified at substantial economies in operation and with enlarged service if we should secure this greater and more economical power development."

Mr. Hoover also says, "The economical distribution of power rests, to a large degree, upon local territorial monopoly. Competitive overlap of power distribution systems would represent tremendous capital and distribution waste. I am not here to advocate federal super regulation of interstate movement of power. I believe that power development and distribution would find its greatest solution in co-ordinated and state regulation, perhaps with assistance and co-operation of the federal government, rather than in any superstructure of authority such as has been found necessary in transportation unless, of course, necessities of the case cannot be attained otherwise."

The state officials, consisting of representatives of public service commissions and engineers, who were present at the conference, expressed approval of the general plan and while disclaiming any intention of speaking for the legislatures of their respective states, promised to co-operate.

Rates on Westbound Grain Reduced 10 Per Cent in Canada

THE BOARD OF RAILWAY COMMISSIONERS of Canada has handed down a decision reducing by 10 per cent freight rates on grain moving westward from the prairie provinces—Manitoba, Saskatchewan and Alberta—to Pacific ports. The perplexing grain rate problem in western Canada was discussed in detail in an article by Thomas M. Fraser which was published in the *Railway Age* of October 13, page 673.

Briefly, the genesis of the agitation for reductions was based on the fact that grain rates from the prairie provinces eastward have been lower than the westward rates, a situation which has pleased neither the growers who desire to ship their products via Pacific ports in British Columbia and the Panama canal nor business men and other residents in British Columbia, who naturally want to handle all the grain they can. The reason for the prevailing higher rate for westbound movement is the rugged character of the country and the heavy grades which make for higher operating costs.

It is true that the Canadian National's line through the mountains is a line of relatively easy gradients and that, on the other hand, the Canadian Pacific has some severe grades to overcome. The Canadian National's line, however, was constructed at great cost in order to avoid excessive grades, so even its line through the mountains is not strictly comparable to its line eastward.

The Canadian Pacific, however, is bound by the "Crows Nest Pass Agreement," which fixes certain maximum rates. This agreement was suspended in 1917, but it was restored last year insofar as it applies to rates on eastbound grain. This agreement fixes a maximum rate for eastbound grain on the Canadian Pacific, to which rate, of course, for competitive reasons the Canadian National had to conform.

The mountain rates bore the ratio of 1½ to 1 as compared with the eastward rates until June of last year, when a reduction was made to the ratio of 1¼ to 1. The recent reduction of 10 per cent is, of course, in addition to this and will bring the ratio of grain rates westward to the Pacific down to 1⅛ to 1 as compared with rates eastward to the Great Lakes or the Atlantic. British Columbia has taken the attitude that there should be no discriminatory differential whatever and that all rates in western Canada should be on a mileage basis. The Railway Commission, while it has reduced the westward rates, does not accept this principle. Instead, it holds that the rates called for by the Crows Nest Agreement are purely local and that it cannot consistently use this agreement as a basis of rate making for any other part of Canada.

Bridge and Building Men Meet at Seattle, Wash.

Association Holds Thirty-third Annual Convention on September 16-18 With Good Attendance

THE AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION held its thirty-third annual convention at the Gowman Hotel, Seattle, Wash., on October 16, 17 and 18. The Puget Sound city was selected for the place of this meeting as a means of giving the members an opportunity to become familiar with the bridge and building problems of the northwest and to obtain a more intimate knowledge of the various species of west coast timbers which are gradually assuming an increased importance in the bridge and building work on American railways. The convention arrangements included visits to saw mills and timber treating plants on the north coast.

A special train carrying more than 100 members of the association with their families, making a party of over 200 persons, left Chicago via the Burlington on October 6, the itinerary of the party including stops enroute for visits to the concrete plant of the Burlington at Havelock, Neb., and the recently completed locomotive shop of the same road at Denver, Col., and for an inspection of the Southern Pacific's trestle across Great Salt Lake which is now in process of being renewed.

The convention was called to order promptly at 10 o'clock Tuesday morning by J. S. Robinson (Chicago & North Western), first vice-president of the association, who presided in the absence of Arthur Ridgway (Denver & Rio Grande Western), president. With 200 members present, the association was welcomed to Seattle by R. J. Middleton, assistant chief engineer, Chicago, Milwaukee & St. Paul, who described the timber resources of the northwest and the magnitude of railway and public export facilities. He closed with an appeal to the supervisory officers to become more active in counteracting destructive criticism of the roads. J. P. Wood (Pere Marquette), responded for the association.

Macey Nicholson, general manager, western lines, Chicago, Milwaukee & St. Paul, addressed the convention Tuesday morning on "The Relation of Employees to the Public." He stated that much of the criticism of the railways has resulted from failure of railway officers and employees to acquaint the public with the magnitude of railway problems. The average traveler or shipper seldom realizes the relationship which transportation bears to public existence and few gain a close-up view of the diversity of the steps which enter into the production of transportation. He emphasized the duty of every railway employee to point out the needs of the railways to those with whom he comes in contact and to plead for the same right of commercial existence that is accorded other businesses.

G. T. Reid, vice-president and western chancellor of the Northern Pacific, addressed the convention Tuesday afternoon on "The Railways and the Investing Public." He traced the effect of invention and development of mechanical equipment on the reduction in the cost of production and stated that the railway employee who reduces the cost of transportation contributes public service. He then showed how widespread the holdings of railway stocks and bonds are and described how the sale of the securities is made possible only from the savings of the people at large. Investors are attracted by the hope of large profits or ample security, and the roads must compete with other industries for the money which they require. Judge Reid closed with a plea for the realization by railway employees of the necessity of curbing attacks on the roads, if they are to continue to serve the public adequately.

The following officers were elected Thursday morning: President, J. S. Robinson, division engineer, Chicago & North Western, Chicago; first vice-president, J. P. Wood, supervisor bridges, Pere Marquette, Saginaw, Mich.; second vice-president, C. W. Wright, master carpenter, Long Island Railroad, Jamaica, N. Y.; third vice-president, E. T. Howson, western editor, *Railway Age*, Chicago; fourth vice-president, F. C. Baluss, bridge engineer, Duluth, Missabe & Northern, Duluth, Minn.; directors, A. I. Gauthier, bridge supervisor, Boston & Maine, Concord, N. H.; E. L. Sinclair, assistant engineer, Chicago, Milwaukee & St. Paul, Marion, Iowa, and J. S. Huntoon, assistant bridge engineer, Michigan Central, Detroit, Mich.; secretary-treasurer, C. A. Lichty, purchasing department, Chicago & North Western, Chicago; assistant secretary, E. Weise, chief clerk, engineering department, Chicago, Milwaukee & St. Paul, Chicago.

Concrete Tanks for Railway Water Service

By C. R. Knowles
Superintendent Water Service, Illinois Central Railroad

[Mr. Knowles presented a paper before the convention on the concrete tank as a utility in railway water service. His paper is abstracted below.]

There are over 20,000 railway water tanks in use on the railroads of the country, and the renewals and new tanks run from 800 to 900 each year; yet concrete tanks represent such a small percentage of the total as to be almost negligible. In an effort to determine the reasons for this limited use of concrete in water tanks the following questions suggest themselves:

1. Is it due to failure to secure water tight tanks?
2. Is there some inherent fault in concrete that makes it unsuitable for the construction of water tanks?
3. Is it due to the fact that no uniform satisfactory design of tank has been produced?
4. Is it due to lack of permanent location for tanks?
5. Is the first cost prohibitive?

Leakage of Tanks

Leakage has been one of the biggest problems that designers and builders of concrete tanks have had to contend with and it is still a much mooted question as to the proper method of securing a water-tight job. There are only two reasons for leakage through concrete—cracks and poor concrete.

Cracks may be due to shrinkage of the concrete in setting, or to expansion or tension due to the pressure of the water in the tank. Cracks may also be formed in joints where pouring is not continuous.

By poor concrete is meant a porous concrete due to improper

proportions of cement and aggregate, poor mixing, too much water or placing the concrete without properly spading it in place. Rupture of the concrete through removing the forms while the concrete is green may develop either cracks or porous concrete.

It is not always possible to prevent cracks in concrete but waterproofing applied as an integral part of the concrete is of questionable value as a preventative of porous concrete and of no value as a preventative of leaks through cracks or joints. The prevention of cracks and resultant leakage is a question of both design and workmanship, waterproofing coming into play only when design or workmanship have failed of their purpose. It would appear therefore, that efforts to find a satisfactory method of waterproofing concrete tanks are secondary to securing a design of tank that will eliminate or overcome shrinkage stresses resulting in large or small leaks or tension on the concrete, independent of the reinforcing.

Results obtained on the Central of Georgia and the Duluth & Iron Range indicate that concrete tanks have proved successful, at least from the standpoint of utility. It is apparent from the experience of these two roads that there is no inherent fault in concrete that will render it unfit for the storage of water if proper construction methods are followed.

There is no doubt that the concrete tank has many points of argument in its favor, chief among which are the following:

1. The materials of which it is constructed are readily obtained in almost any locality.
2. It can be so designed that it will be ornamental or in keeping with other structures.
3. When properly constructed there should be practically no expense for maintenance.
4. Where properly located it is a permanent structure.
5. It is fireproof and under most conditions proof against the elements.

Design

Concrete water tanks constructed on American railroads to date have followed four general designs, so far as the tower, floor and walls are concerned. These designs are briefly as follows:

1. The standpipe type of tank with the floor or bottom of the tank at or near the top of rail and utilizing the entire height of the structure for the storage of water.
2. A cylindrical shell forming both the tower and walls of the tank with a diaphragm or floor placed at the desired height in the shell with a central pier or column to assist in supporting the floor. In some cases the central column has been eliminated, the floor being made self-supporting in the center.
3. A cylindrical shell as above, forming both the tower and walls of the tank and a hemispherical bottom.
4. A tower consisting of columns and a floor system of beams supporting a flat bottom and straight cylindrical walls.

The lack of a uniform design of concrete water tank that would overcome the existing faults resulting in cracks in the concrete, seepage and other leakage has probably reacted against the concrete tank as much as anything else.

In the development of a railroad property it is frequently necessary to move water tanks, and from the nature of their construction concrete tanks cannot be moved. As an example of the changes that occur in the location of tanks, a study of 540 tanks in service on a middle western railroad shows that the location of only 56 has remained unchanged in 25 years. Therefore, the erection of a concrete tank is inadvisable unless the location is known to be permanent beyond the possibility of a doubt.

From the best figures available the cost of a 100,000-gal. concrete tank erected prior to 1918 ranged from $5,000 to $7,500. In all probability these tanks would cost considerably more at the present time. Estimates received in 1920 from a contractor making a specialty of concrete tanks placed the cost of a 100,000-gal. tank of the cylindrical type with an over-all elevation of 62 ft. between $8,000 and $10,000. The cost of a 100,000-gal. steel tank varies from $5,000 to $5,500 and of a wooden tank of redwood or cypress from $4,000 to $4,500. The cost of concrete tanks is undoubtedly a factor which has contributed in no small part to limiting their construction on railroads.

Conclusions

It has been demonstrated conclusively that it is possible to produce concrete that is impervious to water, at least to the extent required in a railway water tank.

No inherent fault has developed in concrete that would make it unfit for the storage of water and there does not appear to be any reason why it should not prove satisfactory for this purpose if the tank is properly designed and constructed.

There are certain features in the construction of concrete tanks that will have to be given further consideration, however, before the concrete tank can be considered with tanks of other types, chief among which is the question of design. It is not the thought that a standard design of tank should be adopted to fit all conditions but certain principles of design will have to be agreed upon before the concrete tank will come into general use.

The difficulty in establishing a location that will be permanent and that will fit in with the development of a railroad property is one of the principal obstacles to the adoption of concrete tanks and their construction will be limited to installations where the location is known to be permanent beyond a doubt.

The first cost is another serious handicap to this type of tank as the investment required does not compare favorably with that of other types of tanks in spite of their acknowledged permanence and low cost of maintenance.

Discussion centered largely around precautions necessary to secure water tight concrete by thorough mixing and avoidance of construction joints.

The Relative Merits of Concrete, Cast-Iron and Corrugated Metal Pipe Culverts

[A committee report was presented before the convention on the various considerations affecting the selection of the three materials most commonly used in pipe culverts. The following is an abstract of this report.]

The replacement of a pipe culvert in a railroad embankment generally necessitates very heavy expense for supporting traffic, excavating and replacing embankment, or for tunneling, which expense is usually materially in excess of the cost of the culvert itself. Consequently, an engineer is justified in giving special consideration to the selection of a culvert which will remain permanent and provide for future as well as present conditions of drainage and railroad traffic. Comparative costs have therefore been considered of minor importance as it is felt that permanency is the main purpose to consider in culvert construction.

Cast-Iron Pipe

The sizes of cast-iron pipe generally used range from 12 in. to 48 in. in diameter. It is generally of the bell and spigot type and on most railroads it is the practice to lay the pipe

with open joints. In some cases, however, the joints are cemented or calked with oakum or packed with clay.

In the long service of cast-iron pipe, failures have been few. Breaking or crushing of the pipe under load is exceptional. Failure due to settlement are more frequent, but they are generally caused by insufficient foundation and the pipe itself is not at fault. Failures due to corrosion are infrequent and occur only at locations where the water is badly contaminated with acids, particularly in coal mining regions.

Special types of cast-iron pipe are on the market which provide a more definite bond between the pipe sections with the object of avoiding slipping at the joints. The use of such pipe has not been generally adopted by the railroads, although there have been experimental installations.

Concrete Pipe

The most common sizes of pre-cast concrete pipe vary from 18 in. to 48 in. in diameter although sizes as small as 12 in. and as large as 60 in. and 72 in. diameter have been used while a special oval type of 84 in. diameter is manufactured for cattle passes.

Most of the pipe manufactured by outside concerns is of the bell and spigot type and the arrangement of the joints is similar to the cast iron pipe. Pipe is usually made in lengths of 4 ft. or 6 ft. Where the bell and spigot type of joints are used, it is the practice of the railroads to cement the joints in most cases.

Failures of concrete pipe have been few in number. Some breakage has occurred due to improper handling before placing and not allowing enough time for curing. Very few failures due to settlement are reported. Some disintegration due to frost action has been experienced, but this was started by hair cracks developed on account of insufficient curing. Slipping of joints occurs in a few cases under conditions where movement takes place similar to that in cast-iron pipe.

Corrugated Metal

Corrugated metal pipe is not used extensively in railroad embankments. It is usually manufactured in sizes of from 12 in. to 48 in. diameter. The better grades of material used come as close to pure iron as possible. Ordinary commercial steel is undesirable for culvert material on account of its rapid corrosion.

The advantages claimed for this type of pipe culvert are the definite longitudinal bond which prevents joint slipping, the flexibility of the section as a whole, which permits it to conform to local settlements without breakage, and its light weight which permits easy handling and shipment. Nearly all railroads which have had this type of culvert in service for any length of time report failures. While in a number of cases these failures represent a small percentage of the installations, cases are also reported where failures have been proportionately high.

Conclusions

Cast-iron pipe and reinforced concrete pipe are satisfactory materials for culverts. The first cost of installation of reinforced concrete pipe is in most cases less than for the cast iron pipe. The life of the two kinds of pipe, where properly manufactured and installed, is nearly equal. The choice between these types will, therefore, be determined largely by local conditions and the question of economy. On a number of railroads, cast-iron pipe is preferred where it is located close to the track, such roads usually specifying a minimum depth of 3 ft. below base of rail to the top of concrete pipe. The tendency of most railroads at this time is to use concrete pipe because of its lower cost of installation.

Under ordinary conditions, corrugated metal pipe is not as dependable. Neither is it expected to give the same life as concrete or cast-iron pipe, and from present experience it is not believed to be capable of resisting heavy loads to the same extent as the other types mentioned. The use of corrugated metal pipe is justified in construction of a temporary character, for cross drains of small diameter located between the ties close to the track level, and also for drainage under farm roads and lightly traveled highway approaches. The experience in regard to its use in railroad embankments is too limited and too much of an experimental nature to warrant a definite recommendation.

[The report was signed by A. B. Scowden (B. & O.), chairman; C. S. Heritage (K. C. S.), vice-chairman; H. A. Gerst (G. N.); R. H. Reid (N. Y. C.); F. W. Hillman (C. & N. W.); R. W. Johnson (C. C. & St. P.); J. S. Lemond (Sou.) and W. L. Ratliff (I. C.).]

Discussion

In presenting the report the chairman described their inability to secure data regarding types of culverts and the character of metals in failures of corrugated metal culverts reported. Several members reported satisfactory service from this type of culvert. Several members reported difficulty with culverts pulling apart under sliding banks, while others stated that foundations of concrete or other stable materials overcame this.

Heating Small Passenger Stations

[The following is an abstract of a committee report presented at the Bridge and Building convention.]

The stove is the most economical means of heating small stations without basements where heat is necessary only in the waiting room and office. If located in the waiting room; it can be provided with a coil connected with a radiator in the office and a comfortable heat will thus be obtained, particularly if the office is not too large. In stations of this type the toilet facilities are usually of the "dry vault" variety, but if not chemical closets may be installed. If the station is provided with water, short hopper closets may be installed and holes with gratings cut in the partitions, through which enough heat will penetrate to prevent freezing.

Stoves are, of course, dirty and are often located long distances from the chimney, necessitating several elbows and lengthy stove pipes which harbor soot (particularly if bituminous coal is used) from which fires are liable to catch. Every heating unit should be inspected and overhauled at least once each year, the stove, stove pipe and chimney given a thorough cleaning and the broken parts renewed. If this work is done well and regularly the stove will prove very serviceable and economical. The maintenance of the stove amounts to very little unless the agent is careless and allows ashes to accumulate, and burn out the grates. Many railroads use stoves of one or two sizes of some standard pattern. If this practice is followed the buying and storing of repair parts will be greatly simplified and reduced to a minimum.

In frame stations without basements, where there is water service and several rooms are to be heated, and where more than one stove would be necessary a hot water heater will be found more serviceable. Such a heater may be installed in the baggage room or in one corner of the waiting room. At points where agents or others are in attendance for about 16 hours each day to look after the fire, excellent and economical results will be obtained. Where these heaters are left without attention for long periods the water is liable to freeze, either in the radiators or in the expansion tank pipe and cause much trouble. A considerable amount of this trouble

may be averted by the installation of a safety valve on the heater which, in case the expansion tank pipe freezes, will function when the fire is revived. This simple expedient was resorted to after a number of hot water systems had been totally destroyed and has been found to work well. The heaters should be placed on concrete foundation or raised five or six inches above the floor and placed on rails or other non-inflammable material. When given the proper amount of attention the hot water heater is economical in both operation and maintenance.

In small frame stations of good construction or in stations of more permanent character, such as those built of brick or stone, where foundations are necessary, a basement should be provided. The heating system may be hot water, steam or hot air, as dictated by local conditions and individual experience, and should be placed in the basement. Each system has its good and bad points. A larger amount of radiation will have to be provided in a hot water system than in a steam system and although the hot water heater itself may cost less than a steam boiler, the larger radiators and extra piping will make the first cost of the hot water system greater. As the hot water heater is not designed to carry pressure it does not have to undergo annual or semi-annual tests as is the case with a steam boiler. With the hot water system heat is obtained as soon as the water begins to circulate and during the early fall and late spring months a comfortable atmosphere may be obtained at a small cost, whereas with the steam system a good fire will have to be made and maintained to obtain the desired amount of heat and quite often more heat than is necessary will result. This is costly. In cold climates or where long periods of cold weather are the rule the hot water system will often be found inadequate and the steam boiler will give more satisfactory results.

Hot air furnaces, including the one pipe variety, have been found most satisfactory in certain locations. They are most economical but are objectionable because they result in a dry dusty atmosphere which is considered unhealthy by many. This may be counteracted somewhat by placing pans of water around the station. It is believed that the hot water heating system is the most expensive to maintain for reasons set forth in the preceding paragraph, whereas the steam heater, which does not afford the same chance for freezing, will be more economical. The maintenance of the hot air furnace will be practically no greater than that for the stove.

Anthracite coal is the most desirable fuel. Its cost is, however, against it and many roads are therefore using bituminous coal. Where the latter is used maintenance costs are higher and greater care must be given to the heating system by all concerned. Larger smoke pipes and flues should be provided and frequent cleaning of the heater, pipe and chimney is necessary. If this attention is given, better results will be obtained and fire hazards reduced. If wood is burned, hard pine should be avoided as a pitchy residue is deposited on the inside of the heater and in the smoke pipes which is highly inflammable. There do not seem to be many installations using fuel oil, but the committee is of the opinion that the use of oil for heating purposes should be encouraged.

In practically all small stations heaters are looked after by agents and their assistants who do the work as part of their duties. The human element is largely responsible for the manner in which a heating unit functions and the best designed heating system can be made both unsatisfactory and costly by lack of proper attention. All heating systems should have a regular inspection with a view to having them thoroughly cleaned, all broken and worn out parts renewed, all pipes covered and everything put in good condition for the cold season. If this work is done conscientiously, maintenance costs will be reduced to the minimum and much trouble will be obviated.

[The report was signed by A. I. Gauthier (B. & M), chairman; T. B. Turnbull (A. A.), vice-chairman; R. T. Everett (B. & O.), and C. J. Scribner (C. B. & Q.).]

Discussion

Discussion by several members emphasized the importance of giving more attention to the condition of the buildings and foundations to avoid heat losses. Others urged more care in the design of stoves ordinarily furnished small stations.

Supervision of Bridge and Building Forces

By George W. Rear

Engineer of Bridges, Southern Pacific, Pacific System, San Francisco, Cal.

[The program of the convention included a paper presented by George W. Rear on the organization required for the conduct and supervision of bridge and building forces. Mr. Rear's paper is abstracted below.]

Bridge and building forces, perform practically all work in connection with the maintenance and reconstruction of bridges, buildings and other roadway structures and appliances and all other mechanical work that is not definitely allotted to some other department. They are responsible for the expenditure of about one-quarter of all maintenance of way appropriations or about two hundred millions per year.

The supervision of this large expenditure, in the face of interference with operation, is a serious problem and affords plenty of opportunity for the exercise of ability on the part of the supervisors.

The supervisor has many duties and responsibilities and at the outset we may assume that he will be short of help and will have to exercise the greatest economy to perform the work with the money that may be available. He should become so familiar with all the structures on his territory as to know all their peculiarities without reference to records. Bridges and culverts are seldom perfect, stations are inadequate, and water and fuel supplies are heavily taxed especially during the periods of heavy traffic. Bridges and culverts may not be able to take care of freshets and floods properly, drift may be troublesome or the traffic over them may be so heavy as to make almost continuous repairs necessary. All of these peculiarities should be well known to the supervisor so proper measures can be taken to protect them in case of necessity.

The supervisor should be responsible for the regular inspection of structures and should inspect them in person at least once each year. Even on large and busy divisions, nothing excuses the supervisor for a failure to see his structures every year. The work of inspection requires experience and sound judgment, especially for those structures that are approaching the time for replacement, due either to physical condition or lack of capacity. Reduced income may make it necessary at times to delay improvements and extensive rebuilding but unsafe conditions cannot be tolerated under any conditions.

The supervisor is responsible for proper records of the structures under his charge even if such records are kept in other offices. He should have the most exact and complete information as to matters of foundation, location of pipe lines, flood damage, etc., as he is the first to be called on for such

information when it is required. It is probable that this feature is quite generally neglected, owing to pressure of other work and lack of sufficient help, but it should not be as it is a duty he owes to his successor and his railroad.

The supervisor should keep records of the work that will be necessary for some months in advance and on a well organized division it should never become necessary to make rush or emergency repairs, except, of course, as the result of washout or accident. Such a program of work, and its authorization in ample time, enable the supervisor to plan his work and avoid moving gangs back and forth over the same territory. This is especially true where the gangs cover a large mileage as is the case on western railroads.

Owing to the variation in lengths of divisions and the work thereon, it is impossible to outline what forces the supervisor should employ, but whether they are large or small they should have only one boss and that should be the supervisor. There should be no deviation from the plan of organization whereby others will give instructions to his men. All orders should be transmitted through the supervisor if he is to retain the respect of his men and be responsible for their work.

The successful supervisor works in close contact with the other departments and one of the earmarks of a good man is the willingness of all the other departments to rally to his assistance when required. Close co-operation with the supply department results in much good, as suitable supplies of the material he needs may often be found in stock, and thus avoiding the purchase of new material. Supervisors should, as far as possible, keep the supply department advised of future requirements, especially if out of the ordinary in character, as this may have the effect of getting better delivery when the material is required.

What manner of man is this of whom so much is expected? Much is expected and the results justify the expectation. No set rule can be set down for the cultivation of men for the position of supervisor—as successful men have sprung from a great variety of conditions, but if we were to consider the qualifications necessary they might be put as follows:

First—Is character, that is, the supervisor should be an upright, clean-living citizen of his community, respected by his neighbors and associates.

Second—He should be a good business man, as it will be necessary for him to handle many business affairs for his employer.

Third—He should be born with the constructive instinct, as he will be responsible for work performed under all the mechanical trades and it is hardly possible to become familiar with all of them.

Fourth—He should be even tempered, fair-minded without prejudices as to religion, race or politics, so that he can treat his subordinates properly and thus earn their loyalty and respect.

Fifth—He should have a good education, especially in these days of complicated reports, etc.

The Practicability of a Uniform Painting Program

[Two discussions were presented before the Bridge and Building convention on the practicability of developing a uniform painting program throughout the entire year as the means of maintaining a more permanent force. A paper on this subject was presented by Tom R. Wyles, vice-president of the Detroit Graphite Co., Chicago, and in addition a report on this subject was prepared by one of the standing committees of the association. Below are presented abstracts both of Mr. Wyles paper and of the committee's report.]

Extreme Hot and Cold Weather Not Conducive to Good Results

By Tom R. Wyles
Vice-President, Detroit Graphite Co., Chicago

On the most of the railroads of this country and Canada, the months of November, December, January, February, March and with many, April, are very unsatisfactory for outside operations. The problem of painting on the railroad in the southern states is, of course, not as seasonable as in the north, but painting there in the hot summer months is to be avoided. Recent tests have shown where painting in the southern tier of states in mid-summer where the daily average of temperature ranges from 100 to 115 deg. and the temperature of the steel reaches 150 deg., a paint coating applied to such hot surfaces thins out so that its protective qualities are greatly reduced. Furthermore, no man can work well from day to day in such temperatures, exposed to the sun and particularly when working on steel that is such a reflector of heat.

Paint is not an economical investment when applied in temperatures below freezing. Many painters make the statement that they can paint below that but they sacrifice much of the durability of the material and the investment in labor. No painter who has to guarantee a job would think of applying his paint in low temperatures for he knows too well that he is sacrificing a great deal of durability in doing it.

Progress can be made towards the establishment of a well-organized painting department and permanent crews if the painting work is carefully analyzed as regards its seasonable requirements. If such a practice is adopted, it will probably surprise the average engineer to find the amount of work that can be done with this crew during the winter; such as the painting of signs, and the interiors of stations, freight houses, roundhouses, shops and offices.

The desirable workman and the most economical man to have on the pay roll is not going to be satisfied with the more or less temporary employment and with the living quarters and equipment which are commonly found on most of the railroads. It cannot be expected that a good man making good wages will be contented to live in quarters such as are furnished in the so-called "bunk cars" at the present time. Is there any reason why you should not have properly-equipped living quarters for these crews, where they can travel more comfortably, be satisfied and do correspondingly better work?

Special painting cars should be constructed as necessary equipment to handle paint well and economically. Such cars should carry tankage for linseed oil, turpentine, and driers, and should be properly equipped to take care of brushes. Some method should be devised for the moving of scaffolding and ladders and they should be handled in the most economical way. There is also room for improvement in the type of scaffolding ordinarily used.

The matter of packages is a vital issue. We all like to purchase paint in barrels because we save a few cents per gallon on the initial cost. However, several railroads have discovered that they can save many thousands of dollars a year by buying all of their paints in five-gallon metal packages. It is not only easier for the stores department to handle them, but these packages are also easier for the painter to handle and they eliminate an enormous waste. Many times, I have known of a small maintenance job for which a barrel of paint has been ordered from the stores department, when 20 gallons would have done the job. Paint costs only 15 cents to 20 cents a gallon more in five-gallon packages and in this type of work where the paint is transported from job to job and carried on a car, this small additional cost per gallon will pay for itself and more.

The importance of a railroad's relations with the public are probably appreciated more by railroad managements

today than ever in the past. Every community has its own individual pride. Good looking stations or railroad buildings in one town do not interest the people in the adjacent town. They want their pride in their own town recognized by the railroad by keeping up its property in an attractive way.

It would be considered a crime if the insurance department of a railroad allowed the insurance on a structure to lapse for one day. However, the painting of buildings and steel structures, performed primarily to protect the railroads' property, is postponed by neglect and budget cutting without anybody being seriously alarmed by its omission. The replacement of structures is so expensive today that painting is becoming far more important than ever. This replacement may be postponed by proper protection. The cost of paint is small in comparison with the average insurance charge and both are certainly out of proportion to the interest on the money for replacement.

Committee Favors Program to Keep Best Men Employed

The general understanding has always prevailed that railroad buildings, bridges and other structures, should be painted only during the summer months and therefore it has become an established practice to organize painting crews in the spring and disband them in the fall. Thus each year the railroads face the problem of finding new painters and in most cases must take on new and inexperienced men and train them. In a measure the roads become the training school for the local contractors and lose much in the economy and quality of the work.

Outdoor painting can only be done when weather conditions are favorable, but such work as can be protected from the weather or is indoors may be done at any time. Thus we see a wide range of conditions on various railroads, depending upon location, varying from those in the south where outdoor work can be done at any season to those in the north where the outdoor season is practically confined to a few months.

The proper time for painting steel bridges is, for the most part, limited to the months of June to September inclusive, although the further south one goes the longer this period is extended. The painting of other steel structures such as tanks, turntables and signal bridges is also limited to about the same period. The season for painting wooden buildings and structures is somewhat longer as the work may be done both earlier and later in the year. The outdoor season is longer on roads located further south. The remainder of the year may well be named the indoor season, and during that period any class of interior painting or the painting of objects that may be brought under shelter may be done.

Painters are good mechanics and are capable of doing other work in connection with their own.. For instance, when a painting crew is working at a station the men could replace broken glass as well as take down stove pipes in the spring, clean and paint them and store them for use in the fall. They could clean out gutters and conductor pipes and paint them before they begin to rust. In the fall they could take out window screens, clean and paint them, and put them away, ready for use in the spring.

As a result of its investigations, the committee feels that it is entirely practicable to perfect a uniform painting program for the entire year which will bring about more efficient and economical painting work and will enable the railway to keep the best men in its employ. If men can be assured of steady employment for the entire year, it is not likely that they will be induced to leave for temporary work at a slightly higher rate of pay. The morale of the crew will be greatly improved because the men, feeling themselves a part of a permanent organization, will take a greater interest and will give a greater return to the railway both in the quantity and quality of work done.

[The report was signed by H. J. Barkley (I. C.), chairman; J. B. Gaut (G. T.), vice-chairman; Eldredge E. Candee (N. Y. N. H. & H.); J. B. Clark (B. & O.); J. S. Ekey (B. & L. E.); J. A. Hanson (C. C. C. & St. L.); W. C. Harman (S. P.); G. A. Mitchell (G. T.); W. A. Pettis (N. Y. C.) and L. K. Sorenson (C. M. & St. P.).]

In discussing this report several members described economies they had effected by employing the best men in each gang throughout the year. On one road on which a careful check was made of work done this summer it was found that enough interior painting had been done to have kept 40 per cent of summer forces busy all winter.

Water Facilities at Stock Yards

[One of the committee reports presented at the Bridge and Building convention covered the considerations affecting the provision of adequate water supplies at stock yards and the maintenance thereof. Following is a brief abstract of this report.]

The provision of an adequate supply of water at stock yards and the maintenance of this supply under all conditions is as essential to the operation of railroads as the furnishing of cars for transporting live stock.

The water is usually taken from existing mains supplying other facilities. At the smaller yards a driven or dug well will furnish an adequate supply. Where water is close to the surface a 1¼-in. pipe with a drive point and a 3-in. by 10-in. cylinder with a hand pump will answer. Where these cannot be used a 2-in. or 3-in. tubular well is used with a windmill or other power for pumping.

Because the need of water at stock yards is intermittent the use of gas or oil engines for pumping is not practicable except at large feeding-in-transit yards, and at these water can usually be secured from city mains or railway pumping plant.

Storage tanks vary in size from 1,000 gal. capacity up, according to the needs of the yards. At the smaller yards, where it is not necessary to protect the water supply from freezing, galvanized iron tanks of 1,000 to 2,000 gal. capacity are preferable, because they can be drained in the fall.

Pipe lines should be of a size consistent with the need of the yard, ranging from 1-in. for small yards to 6-in. for large feeding yards. However, 1¼ to 2-in. mains will be sufficient for the average yard with branch lines to hydrants of corresponding size. Wherever practicable, water mains should be located outside of the yards.

While watering troughs are constructed of galvanized iron, wood and concrete, and are of various lengths and sizes, wood is most commonly used. For stock these are made 16 ft. long with flaring sides 10 in. deep, being 10 in. wide inside at the bottom and 12 in. wide at the top with one ⅜-in. bolt at each end and two struts at the center. While these troughs are of low first cost they are not always satisfactory because when not used they dry out and leak.

Troughs for hogs are constructed of 2-in. by 10-in. by 16-ft. and 2-in. by 12-in. by 16-ft. plank spiked together V-shaped with ends and three struts between. These troughs are favored in many places as freezing does not damage them to any great extent and unless decayed, cracks can

easily be repaired with a little thick paint and battens. Metal troughs are from 12 ft. to 16 ft. long and 20 in. wide at the top with half circle bottom. Concrete watering troughs are used with success by many railroads, even in the colder climates. Showers should be located at all stock yard chutes for wetting down cars for hogs before loading. They are also provided by many railroads at roadside tanks or water penstocks. For use at stock chutes a 1-in. hydrant with hose connection is suitable. Showers for wetting down hogs in transit are usually located at or near water stations, are constructed of 2 or 3 in. pipe, and are provided for both double and single deck cars. A gate valve is provided in the main to control the flow of water. For single deck showers the riser pipe extends about 6 ft. above the rail, where a spray nozzle is attached with elbow and tee with loose joint and handle on the side opposite the nozzle. A rope is attached to the end of the handle for convenience in pulling up the nozzle. The nozzle is constructed by flattening out the end of the pipe to leave a 3/8-in. opening. Stock in cars can be wet down thoroughly with this type of shower while moving by slowly.

The report was signed by Herman Heiszenbuttel (C. & N. W.), chairman; A. M. Swenson (M. St. P. & S. S. M.), vice-chairman; F. M. Case (C. & N. W.); E. A. Demars (O. S. L.); H. H. Frazer (S. P.); C. J. McCarthy (C. M. & St. P.); and G. T. Ray (St. J. & G. I.).

Other Reports Presented

[Following are brief outlines of the committee reports on subjects relating to routine details of the bridge supervisor's work which cannot be treated at length here.]

Tools Used by the Bridge, Building and Water Service Forces

One of the most valuable reports presented before the Bridge and Building convention, from the standpoint of its utility to those directly engaged in the work, was a report by the Committee on the Tool Equipment for Bridge, Building and Water Service Maintenance Gangs, the report being based on information obtained from a considerable number of the railroads as to the extent and character of equipment supplied to the bridge and building forces. On the basis of this information a suggested list of equipment for this purpose was presented, together with supporting data in the form of actual lists obtained from some of the railroads.

A considerable portion of the report was devoted to a discussion of the application of more recently developed equipment to various special purposes in bridge and building work. Suggestions founded on this discussion as affording means of the more economical conduct of bridge and building and water service maintenance, included items as: Acetylene and welding outfits, pneumatic tools, power saws and dappers, power hoisting equipment, the motor car, the cement gun and special equipment for use by water supply gangs, notedly such as supply means for detecting leaks in pipe lines.

Discussion

Discussion of this report was confined largely to the possibilities of utilizing motor cars as power units for sawing lumber and other bridge and building operations. Several members reported ingenuous installations which effected marked economies in labor. Other members emphasized the necessity of care in the distribution of tools to avoid loss, and the consensus of opinion indicated that the roads could afford to give more attention to this phase of the subject.

Methods of Replacing Culverts, Sewers and Pipe Lines Under Traffic

Another interesting report presented before the convention discussed the methods by which culverts or pipes could be placed under embankments or by which old waterways could be replaced while insuring continuity of traffic movement over the embankment. Where the embankment is composed of unstable material the committee recommended the open excavation method with the provision of false work to carry the tracks, the character of track structure depending upon the width and depth of excavation required. In deep fills composed of favorable material, the tunneling method will prove more economical. Suggestions were also offered for the renewal of old timber boxes with pipe culverts placed inside of the old structure, novel methods being suggested for the handling of this rather difficult work. The report also included an appendix in which various members of the association described methods which they had put to practical use in solving some of the problems imposed by such work.

Discussion

Discussion of this subject was limited largely to the consideration of relative merits of supporting track on piling and driving tunnels through embankments, tunneling being generally favored under most conditions.

The session Tuesday evening was devoted to a consideration of the timber supply. Ernest Dolge, vice-president, West Coast Lumbermen's Association, described the timber resources of the northwest and presented the problem of the manufacturers in meeting railway requirements. Of approximately twenty-two hundred billion feet of standing timber in the United States, half is in three states on the Pacific Coast, while over one-quarter of the production is here. He urged serious consideration of the problems of standardization of sizes, grades and nomenclature, and of problems of reforestation and fire prevention.

The Repair and Renewal of Ballast Deck Trestle

A committee report was presented to the convention on the problems arising in the repair and renewal of ballast deck trestles, considerable of the material in the report being based on experience in work of this kind on the Southern Pacific trestle across Great Salt Lake, as well as on other structures. According to the experience of the committee, the condition of these trestles upon dismembering for the purpose of renewal is usually found to be much worse than external inspections would indicate.

The committee called attention to the fact that the form of trestle deck in which the construction comprises a solid plank floor supported on stringers spaced appreciable distances apart affords much greater facility for the conduct of repairs than is the case with the older form of construction in which the deck comprised a solid bed of stringers placed one against the other. The newer form of construction affords much better means for the replacement of one or more decayed stringers without disturbance of the entire deck and also permits of the driving of additional piles in a manner that would be out of the question in the case of the solid stringer construction without complete dismantling. The committee also cautioned against injury to portions of the structure not removed through carelessness of the workmen in handling tools. Most of the report was devoted to detailed directions for the handling of the renewal and repair work.

The Canadian Pacific has subscribed $2,000,000 to the new Dominion loan.

Judge Lovett Chairman of Union Pacific Board

Relinquishes Chairmanship of Executive Committee—To Devote Attention to Consolidation and Valuation

JUDGE ROBERT S. LOVETT, chairman of the executive committee of the Union Pacific, presented to the board of directors of that company on October 11, his resignation from that position which he has held since 1909. The resignation is to take effect on January 1, 1924. Judge Lovett will continue his association with the Union Pacific properties in a new position of chairman of the board of directors and will devote particular attention to matters of consolidation and valuation.

With his resignation Judge Lovett presented a plan, which was adopted, for a change in the Union Pacific organization. This, besides calling for the creation of the new position of chairman of the board, embodies the abolishment of the former executive committee and the establishment in its stead of a finance committee. The responsibilities of Carl Gray, president of the properties, with headquarters at Omaha, are to be increased and he is to be placed in full charge of the properties in the West. The New York office will be placed in charge of the controller, F. W. Charske, who is to be elected a vice-president. The official announcement of the adoption of this plan gave also the following further details:

Judge Robert S. Lovett

"The board of directors has today amended the by-laws of the company by creating a finance committee, which shall have charge of all financial affairs and investments of the company and possess all the powers of the board of directors when the board is not in session; by enlarging the responsibilities of C. R. Gray as president and placing him in full charge of the operations of the property in the West, subject to the usual control by the board of directors and the specific control by the finance committee in regard to larger capital expenditures; by placing the New York office in charge of the controller, who is to be elected a vice-president and who will be the channel of communication and information between the president and the board of directors and the finance committee."

Pursuant to the new plan the board of directors appointed the following finance committee, the appointments to be effective as of January 1, 1924. Charles A. Peabody, W. A. Harriman, C. B. Seger, Paul M. Warburg, Newcomb Carleton and Robert S. Lovett, ex-officio. The chairman of the committee will be elected after January 1, when the appointments become effective. It is understood that the chairman chosen will be Charles S. Peabody, who is president and trustee of the Mutual Life Insurance Company and chairman of the executive committee of the Illinois Central. Such an appointment would practically place Mr. Peabody at the head of the Union Pacific System.

As chairman of the board of directors, Judge Lovett will be given specific jurisdiction over the Union Pacific's interest in matters of consolidation and valuation. He will not have any duties or responsibilities with reference to the general problem of management except such as devolve upon him as a director of the company and a member ex-officio of the finance committee. He has said that the step which he has taken is upon the advice of his physicians that he lessen his work and responsibilities.

Judge Robert S. Lovett has guided the activities of the Union Pacific system since 1909. He came to the system as a result of the affiliation of the Union Pacific and Southern Pacific under the Harriman regime, practically his entire railroad career prior to this time has been with the properties of the Southern Pacific. He was born on June 22, 1860, at San Jacinto, Tex. He entered railway service in 1884 as a local attorney for the Houston East & West Texas, now one of the constituent companies of the Southern Pacific, Texas & Louisiana Lines. He later became assistant general attorney and general counsel of the Texas & Pacific returning to the Southern Pacific interests as general counsel of the Southern Pacific Lines in Texas, while a member of the law firm of Baker, Botts, Baker & Lovett. This position led to that of president of the Houston & Texas Central, another Southern Pacific property and finally to that of general counsel of the Union Pacific and Southern Pacific and affiliated lines. In 1904 he was elected vice-president and general counsel of the same roads and on September 13, 1909, chairman of the executive committee. He has continued as a chairman of the executive committee of the Union Pacific and its subsidiaries, the Oregon Short Line, the Oregon-Washington Railroad & Navigation Company and the St. Joseph & Grand Island and finally of the Los Angeles & Salt Lake. He served as chairman of the executive committee of the Southern Pacific until January, 1913, when the relations of the Union Pacific and Southern Pacific were dissolved by order of the United States Supreme Court. During the period of federal control Judge Lovett served as director of the division of capital expenditures of the United States Railroad Administration.

THE INTERNATIONAL-GREAT NORTHERN has appealed to the United States Supreme Court in the suit involving its desire to move its shops from Palestine, Tex., to Houston.

G. R. S. Train Control Demonstrated on C. & N. W.

Actual Service Test Shows Practicability of Intermittent Tapered Speed Control and Stop Indications

THE CHICAGO & NORTH WESTERN demonstrated the General Railway Signal Company's system of intermittent inductive tapered train control on October 13, between West Chicago, Ill. and Forris (Elgin). A special train consisting of an Atlantic type locomotive, a business car and a parlor observation car left Chicago at 9:00 a. m., the test being completed at 3:00 p. m. Fifteen railroads

Making Low Speed Tests Over Pair of Track Inductors

were represented by signal, mechanical and general officers, there being a total of 41 present.

The territory on which this device is installed is not a portion of the line designated in the Interstate Commerce Commission's order and this installation was made primarily for test purposes. From West Chicago to Wayne, there is five miles of double track, the balance being single track. The double track is equipped with Model 2A, direct-current signals located on bridges and the single track is equipped with the absolute permissive block system, Model 2A, direct-current signals being mounted on the masts in the usual manner.

The installation is of special interest due to the nature of the track and the varied classes of traffic which operate over it. Fixed limited speed is imposed at certain locations, as approaching the end of double track and interlocking plants, *i.e.*, certain fixed speed limitations are in effect which are enforced through the use of pairs of inductors constructed without windings. The speed control scheme generally uses three pairs of inductors governing the approach to stop signals which force the deceleration of a train to insure a safe stop. Speed is so tapered as to handle the trains as they would be handled manually, automatic braking being used only when speed limits are exceeded.

There is an interlocking plant a short distance from the West Chicago station from which it has been customary, under certain traffic conditions, to advance trains to the station on "Call-on" signals. The limited speed indicated by the "Call-on" signals is now enforced by the application of pairs of inductors suitably placed between the interlocking plant and West Chicago station.

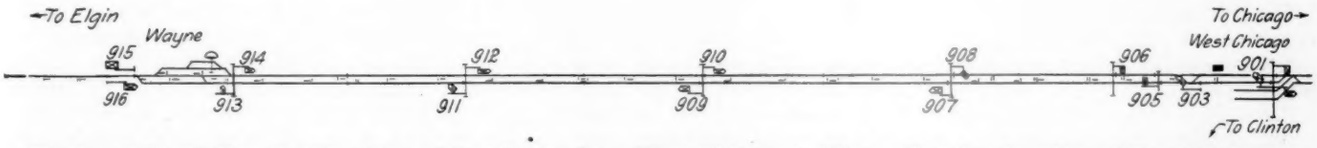
The speed control and receiving apparatus for freight and passenger locomotives is identical except for the timing of the time element contactor. Locomotives that are, under certain circumstances, used in both passenger and freight service are equipped with time element contactors that may be automatically adjusted for either class of service. At present two passenger and two freight locomotives are equipped with receiver apparatus and mechanism for operating engineer's brake valve. A number of tests were made to demonstrate the operation of the system for both speed control and train stop features. Detailed description of the General Railway Signal Company's train control system was published on page 521 of the *Railway Age* for March 4, 1922.

Actual Train Operation Tests Made

On leaving West Chicago, the special test train followed a scheduled milk train, the engineman of the special train being instructed to pass signals at "caution" or "danger" in an attempt to close up on the milk train. While the milk train was in the block signal 913 *i.e.*, at the station at Wayne, signal 913 was at "stop," and signal 911, at "caution." Under these conditions the special train, in approaching signal 913 at a speed of 55 m.p.h., received a brake application at the first pair of inductors after passing signal 911. This automatic application of the brakes brought the train to a stop in approximately 3,300 ft. with the locomotive and one-half the length of the first car past the signal.

Relays and Timing Element Are Housed in a Cast-Iron Box on the Tender

The special train then followed the milk train west from Wayne on the single track. Signal 919, in the caution



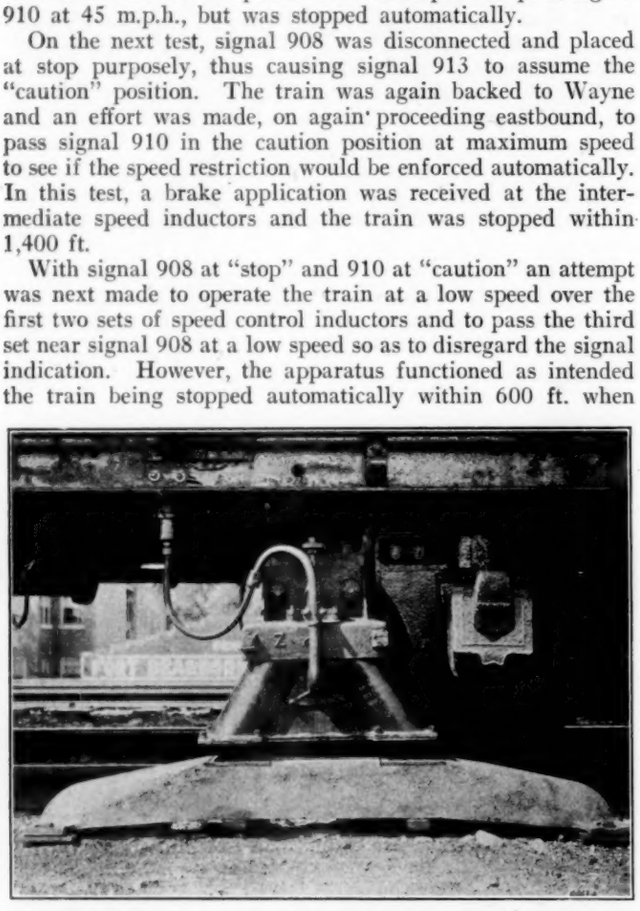
Track and Signal Plan for That Part of Installation from West Chicago to Wayne Showing Location of Track Inductors

position, was passed at a speed of 40 m.p.h. and an automatic brake application was received at the second pair of inductors bringing the train to a stop at a point about 500 ft. before the signal was reached.

The train was then backed to West Chicago and turned. It then backed to Wayne where it was crossed over and headed east on the eastbound track. While a gravel train was in the block the special train attempted to pass signal 910 at 45 m.p.h., but was stopped automatically.

On the next test, signal 908 was disconnected and placed at stop purposely, thus causing signal 913 to assume the "caution" position. The train was again backed to Wayne and an effort was made, on again proceeding eastbound, to pass signal 910 in the caution position at maximum speed to see if the speed restriction would be enforced automatically. In this test, a brake application was received at the intermediate speed inductors and the train was stopped within 1,400 ft.

With signal 908 at "stop" and 910 at "caution" an attempt was next made to operate the train at a low speed over the first two sets of speed control inductors and to pass the third set near signal 908 at a low speed so as to disregard the signal indication. However, the apparatus functioned as intended the train being stopped automatically within 600 ft. when



Receiving Element on Tender Truck Standing Over a Track Inductor

traveling at 23 m.p.h. although working steam until actually stopped. In repetition of this test at 25 m.p.h. the train was stopped at the signal. All of the foregoing tests were made with a brake pipe pressure of 70 lb. instead of 90 lb. which accounted for the engine and part of one car overrunning the signal in one test.

The system was not installed with the idea of stopping light trains with low brake pipe pressure and with throttle open short of the signal in case of an automatic application of the brakes. Should a railroad require an installation to give protection under such conditions it is provided by installing the control points further in the rear of the signal with which they are associated.

Tests were made next to determine the minimum speed at which an effective impulse could be received by the equipment from a track inductor. The low-speed pair of track inductors used for this test were 34 ft. apart, and the following results were obtained from timing the passing of the engine over the inductor with a stop watch.

It will be noted in the table below that no impulse was received at a speed of approximately 2.4 miles an hour. The engine used in this test, however, was one of the first ones equipped in which the receiver was placed between the journal box and springs. Later engines are now being equipped having the receiver overhung and outside of the journal box which, it is claimed, results in more powerful impulse, and had the receiver been mounted in this way an impulse would have been received at speeds lower than those shown in the table blow.

	Speed M. P. H.	
1.	2.41	No impulse received from either inductors
2.	2.79	Impulse received from first inductor only
3.	2.88	Impulse received from first inductor only
4.	3.22	Impulse received from first inductor only
5.	3.86	Impulse received from both inductors
6.	4.28	Impulse received from both inductors

On the final test with signal 908 at stop and 910 at caution and the train running past signal 910 at 57 m.p.h., the automatic brake application was received at the high speed inductors which stopped the train just short of signal 908. Steam was worked until the train was stopped.

Asked To Prevent Waste of Refrigerator Cars

WASHINGTON, D. C.

DELAYS IN THE UNLOADING of refrigerator cars at destination have become such a serious matter, causing car shortage in some sections of the west, and congestion and embargoes at eastern terminals, that the Car Service Division of the American Railway Association has called upon the principal fruit and vegetable associations of the country to make an investigation to determine if it is not in their own interest, as well as that of the railroads, to adopt some plan that will prevent the great waste of refrigerator cars and terminal facilities that now exists, due to various improper practices on the part of receivers of perishable traffic.

In a letter to the secretaries of these association, M. J. Gormley, chairman of the Car Service Division, says he has heretofore held the opinion that more could be accomplished by co-operation than by a penalty charge for the detention of refrigerator cars, but that the question has become so serious that the time has come to give serious consideration to a charge of such amount as may be effective, possibly $25 a day.

There is comparatively little shortage of refrigerator cars except in California, but there have been loud complaints from that section from shippers anxious to load their fruits and vegetables, particularly grapes, before they spoiled, and the cars have been arriving in the East much faster than their contents have been disposed of. The reported shortage of refrigerator cars increased from 190 in the first week of September to 992 during the last week of the month, of which 919 were in the Central Western district, and during the first week of October the number had increased to 2,256, although at the same time surplus refrigerator cars to the number of 1,059 were reported from various sections. On October 8 reports received by the Car Service Division showed 1,737 refrigerator cars at 19 terminals that had been delayed for three days or longer awaiting unloading, some of them for 20 days or longer. The number had increased from 1,282 on September 22. These were at practically every large terminal in the country but the greatest number, as indicated by reports as of October 6, were at Pittsburgh, 375; Chicago, 311, and New York, 240.

Mr. Gormley's letter is as follows:

Mr. Gormley's Letter

"As you gentlemen know, I have been consistently of the opinion that the railroads should not restore the $10 penalty charge at one time in effect on refrigerators delayed in unloading. I have held to this position in the belief that with the active co-operation of your various associations, and com-

mittees that you have established in practically all of the large distributing centers, that the cars would be unloaded more promptly by reason of this co-operation than they would if the $10 penalty charge was applied, and that alone depended upon to prevent delay to refrigerator equipment.

"I believe that a very great deal of good has been accomplished by your activities in this direction, but from the reports of delays to refrigerator cars coming to our attention recently, it is evident that your control over the situation is not such as to bring about the prompt release of all refrigerator equipment, and the failure to unload refrigerator cars promptly today is responsible for such shortage of refrigerator equipment as exists.

"My opinion that your control over the situation has not been as effective as it should be is strengthened by a report from our district manager at Pittsburgh, extracts from which are shown in the attached. Memorandum second attached is an extract from report of one of our car service agents made at one of the eastern terminals.

Causes

"We have a great many reports, copies of a number of which you have seen, indicating a very large number of cases where cars were delayed in unloading from 5 to 20 days and in some cases for even longer periods. The causes for this condition are probably due to—

1. Shipments exceeding the capacity of the markets to absorb.
2. Holding for higher prices.
3. Peddling from the cars.
4. Use of the car as a storage facility due to failure to provide proper cold storage.

"We do not believe that the railroads should be called upon to furnish a sufficient supply of refrigerators to be used for storage purposes at destination, through failure of the distributing interests to provide their own facilities.

"It is well recognized that one of the causes for delay to refrigerator equipment is the peddling from refrigerator cars. This the railroads have endeavored to correct in every practicable way, but it is very difficult to control for the reason that it is not possible to always define definitely 'what is peddling from the car.' We believe this is one of the questions that should have your consideration in order to definitely define what peddling is, as distinguished from legitimate jobbing.

"This question has become so serious that we believe a thorough investigation should be made by your associations to determine, before next season, if it is not to the best interest of all concerned to impose a charge for refrigerators, held for unloading or reconsignment in excess of 48 hours, of such an amount as will make it unprofitable to use refrigerator cars for storage purposes by those interests that have not provided proper storage facilities to transact their business, or for the purpose of peddling to the trade.

Suggests $25 Per Day Charge

"We have in mind that possibly a charge of $25 per day for refrigerator cars delayed awaiting unloading or reconsignment in excess of 48 hours would bring about the desired results in the release of refrigerator equipment. This would in itself probably prohibit peddling from cars and eliminate that difficulty.

"We have no preconceived plan as to how, in our opinion, the matter should be handled, but we believe that a thorough survey should be made by responsible organizations, like yours, possibly in co-operation with the railroads, to arrive at some plan that will prevent delays to refrigerator equipment, and which in turn might force a change of the flow of traffic to these distributing centers in such a way as to make embargoes unnecessary by the railroads on account of accumulation at the markets.

"In dealing with this matter we believe it should be kept clearly in mind that delay in unloading refrigerator cars is a distinct detriment to the producer. The entire matter, therefore, is submitted for your careful consideration. A copy of this letter will also be sent to the various railroads and private car interests in order that it may also receive their consideration."

The report from the district manager at Pittsburgh referred to states that it is evident that the rank and file of the produce trade in Pittsburgh are not receptive to any suggestions that will improve the situation and "consider that transportation, and the means of transportation, are subjects to play with as they see fit."

The Situation at Pittsburgh

Writing under date of October 4, he said that a general embargo had been placed against the Pittsburgh market and that there were about 1,100 cars on hand in the produce yards and between 500 and 600 held out. As soon as an embargo is placed, he said, the receivers there immediately issue instruction to shippers to consign shipments to nearby distributing yards, where they will be held until the embargo is lifted and then reconsigned to Pittsburgh. Also, it is a common practice to unload cars for delivery partially, leaving the balance of the shipments in the car to be filled up with other commodities and sent to outlying points. The report referred to one refrigerator car which arrived at Pittsburgh on September 6, to which a brokerage company on September 8 returned 47 crates of melons, hauling them away again on September 12 and returning them the same day. In another case a brokerage company returned 22 crates of apples and 4 crates of tomatoes on September 8 to a car which had arrived on September 3, although the tomatoes had not been received in that car. It was the feeling of all concerned, the report said, that as soon as the embargo was released, the fruits and vegetables then in transit would be reconsigned to Pittsburgh in such volume as to cause another accumulation within 24 hours. "The consignees have shown by word and action," the report added, "that the prompt release of cars is of no consequence to them and that they are willing to pay whatever demurrage, track storage and refrigerating charges may be assessed against them as long as it enables them to hold shipments in cars until a profitable market price is obtainable."

Report of Fuel Distributor

WASHINGTON, D. C.

THE RAILWAYS are successfully meeting today's unprecedented traffic demands, says Federal Fuel Distributor F. R. Wadleigh, in his final report to the President on the expiration of his term of office, and it is expected that the transportation of coal and other fuels will be adequately handled during the coming winter season. "Since there is no reason to anticipate any substantial interference with the production of coal during the winter months," the report says, "the country may be reasonably assured of an uninterrupted supply of this commodity so necessary to its health, comfort and prosperity. Production, movement and distribution of coal is so vitally affected by rail transportation conditions that the entire transportation situation has been described in some detail; its close connection with fuel distribution should be clearly understood."

Some extracts from parts of the report relating to transportation are as follows:

The work of the Federal Fuel Distributor included measures for stimulating production after the resumption of mining and this was accomplished by helping to obtain an adequate supply of coal cars for those fields supplying the markets where fuel was most urgently needed. The report

of my predecessor has already pointed out the preliminary action of the Interstate Commerce Commission in making provision by general orders for priority in car supply for the transportation of coal. Our assistance was required in special cases only and in most instances it was possible to relieve the situation without the necessity for special orders for car supply and movement, through the action of the carriers themselves. These cases were handled principally through the co-operation of the American Railway Association with the federal distributor. It will be noted that, despite the suspension of mining for a period of approximately five months in the union bituminous fields, the production for 1922 was only 8,000,000 net tons less than it was in the preceding year.

Bituminous

Transportation of bituminous coal was hampered by an abnormal quantity of bad-order equipment, due to the shopmen's strike in the summer of 1922, by bad weather, and by an extraordinary demand for transportation facilities on account of the fact that the strike in the anthracite and bituminous fields in 1922 prevented the accumulation of stocks of fuel prior to the advent of cold weather. Despite these handicaps, it was possible to prevent, to a large extent, suffering on the part of domestic consumers or any substantial interference with industrial activities. The railways made steady progress in overcoming their handicaps, as will be seen from the weekly record of car loadings, and the reports of cars and locomotives needing repairs appearing in the index of this report. While local shortages in the bituminous supply were found to exist in a number of cases, it was possible to take care of these situations through the co-operation of producers and carriers in all except six cases, for which the assistance of the Interstate Commerce Commission was invoked to the extent of procuring priority orders.

Anthracite

During the past winter the supply of coal cars for the anthracite fields was practically 100 per cent and was, with few exceptions, equal to the production capacity at all times. In this field the limitation was production capacity. With an adequate supply of cars, the transportation of the supply of anthracite produced proceeded normally except where hampered by heavy storms and cold weather, principally in northern New York and New England, during the months of January and February. In the early part of the year the aftermath of the railway shopmen's strike hampered movement of cars to some extent.

Railway Transportation in 1923

The existence of the railway advisory committee appointed by my predecessor from the executives of the principal coal-carrying roads was continued, but the transportation situation in general had shown such steady improvement that it was deemed unnecessary to hold any meetings of this committee after January 1. The improvement in the transportation systems of the country is evidenced by the fact that, notwithstanding the effect of the miners' strike and the strike of the railway shopmen in 1922, the railways handled the largest volume of traffic during the six months following January 1, 1923, that was ever transported in the history of the country during a corresponding period. Early in April the railways adopted a program for the improvement of transportation facilities of the country during 1923, based on the expectation that the traffic offered would establish new records for volume owing to an anticipated larger development in agriculture and other departments of industry.

Regional advisory boards, composed of representatives of shippers and the railways, were organized in various regions to work out the problems relating to transportation of commodities in each region.

The progress of the railways on the program adopted is shown by the following figures, which will be found in more detail in the appendix of this report. The cars of coal and coke loaded during the 35 weeks ended September 1, and the total loading of all commodities for the same period were as follows:

	1923	1922	1921	1920
Coal	6,499,704	4,227,883	5,224,289	6,490,727
Coke	515,177	297,874	210,644	401,315
All commodities	33,161,743	27,607,701	25,754,571	29,913,592

Distribution

The federal fuel distributor was required to ascertain facts and conditions and make appropriate recommendations pertaining thereto to the Interstate Commerce Commission to the end that equitable distribution might be secured.

So far as bituminous coal was concerned, improvement in the supply was effected at a compartively early date after the resumption of mining. This was due principally to the fact that the bituminous mines of the country have a production capacity far in excess of normal demands and to the further fact that this extra capacity was utilized to a greater than normal extent by increasing the car supply for handling coal by means of priority orders issued by the Interstate Commerce Commission limiting the use of open-top cars to coal transportation only.

Distribution of bituminous coal was somewhat hampered by the fact that a number of cars from the principal coal mines in the eastern producing fields had gone loaded to western and northwestern territory during the strike, and it required considerable time to get these scattered cars back on home lines. It was necessary to give special attention to car shortages of this nature in some cases by providing for an arbitrary supply to be delivered to the suffering road from connecting lines. This was carried out through orders issued by the American Railway Association, which gave special attention to the car supply of all lines handling coal and rendered invaluable help in all cases requiring special consideration.

Distribution (of anthracite) in the New England States, in northern New York, and in the northwest territory served by the upper lake docks was badly hampered by severe weather in January and February. It was necessary for the Interstate Commerce Commission and the American Railway Association, and the railways themselves, to make special efforts to expedite the movement and handling of coal cars in New England and northeastern New York territory. The American Railway Association and the Interstate Commerce Commission stationed special representatives in these regions and at the gateways serving them to give immediate supervision to the movement of coal cars to facilitate their handling, forwarding to destination, unloading and return to the mines.

Notwithstanding all possible efforts to speed up production, transportation, and distribution of anthracite, severe shortages developed in some localities. This was due in some measure at least to the fact that consumers failed to make efforts to obtain substitute fuels which were available. With a shortage of 40 per cent in anthracite production during the coal year ended March 31, 1923, it is evident that considerable quantities of substitute fuels were used in the anthracite consuming states, despite the reluctance of consumers.

Since January 1, 1923, the federal fuel distributor has found it necessary in only six cases to recommend to the Interstate Commerce Commission the issuance of service orders for priority in car supply or movement to provide coal to take care of actual or threatened shortages. Four of these cases involved supplies of fuel for government use. One involved the movement of a supply of fuel from New Haven Harbor to the Springfield Gas Light Company, of Springfield, Mass., and one involved preference and priority for the movement of coal destined to northwestern New York and the New England States. All of these requests were granted by the Interstate Commerce Commission and made effective through its service orders, with the exception of the one last named.

Great Northern Conditions Show Improvement

Will Earn Five or Six Per Cent on Stock—Net Operating Income for 1923 Should Be Best Since 1917

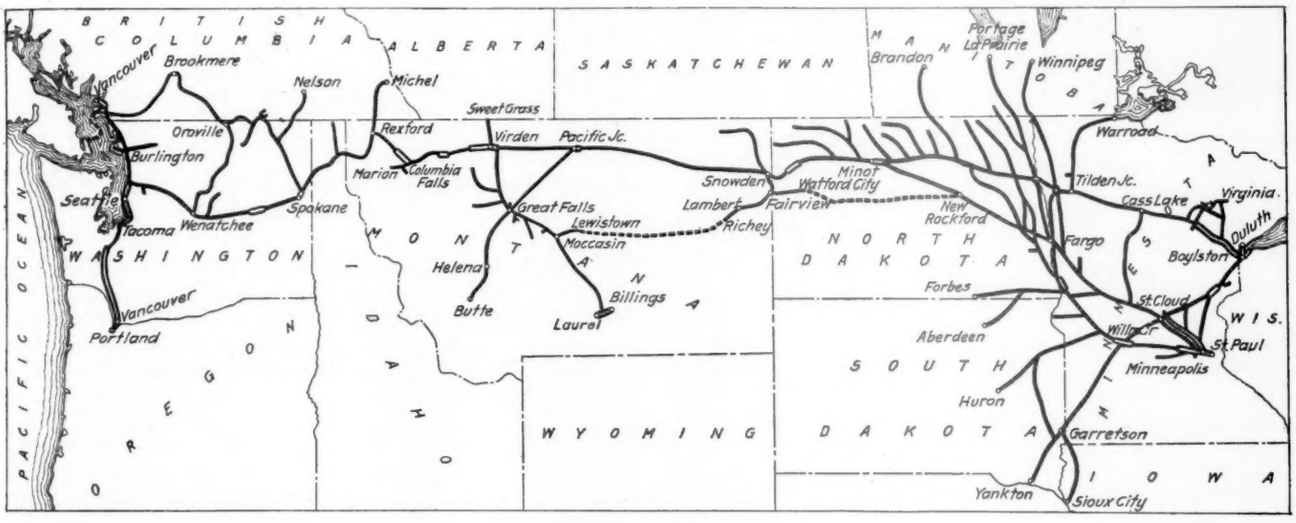
SO MUCH HAS BEEN SAID about the misfortunes of the northwestern carriers that the situation with which they have been confronted for the past several years, and during the early part of the present year in particular, is now pretty generally realized and understood. Within the past few weeks, however, there has been noticeable an increasing tendency on the part of many competent observers to point out that there are various signs of improvement in the situation.

Reason for Poor Earnings in Early Part of Year

The volume of material that has been written about the operating disabilities of the northwestern carriers is so great that it serves to refer to them only in topical form. The factor of most importance, or at least the one of greatest present interest, is, of course, dollar wheat. This has been caused by lack of a market for wheat production and has affected the wheat carrying railroads in two ways, one, because the wheat has not moved, and the other because of the limitation that the low price of the commodity has put upon the buying power of the farmer in the wheat territory. A second factor of importance is embodied in the rate structure, and more particularly from the fact that as compared with pre-war figures the level of rates in the northwestern region does not show as great an increase as is the case in the eastern and southern districts. A third factor is the Panama Canal competition and a rate relationship which has prevented the transcontinental carriers from competing on business to the Pacific coast without making reductions to intermountain territory involving losses on the latter business out of all proportion to any possible gains relating to traffic moving to the coast points. There is a belief also that maintenance costs in the northwest have increased in greater proportion over the pre-war figures than has been the case in other sections of the country.

The Great Northern has received a considerable share of the favorable attention of those who apparently gradually incline to take a more optimistic view concerning railway conditions in the Northwest. Northwestern roads move by far the larger share of the year's traffic in the latter months of the year. As a result their earnings in the early months of the year do not show up favorably; the earnings in the early part of 1922 were not good, and they appeared particularly poor when contrasted with the much more favorable results reported by the eastern or southern carriers. In the case of the Great Northern the situation is accentuated by the ore traffic which constitutes approximately one-third the road's total revenue tonnage and which moves during the lake season only.

The Great Northern's earnings have a tendency to vary widely due to the extreme manner in which the volume of ore tonnage varies from year to year. The ore movement does not begin until the opening of the lake season, which occurs about May, and therefore the earnings of the Great Northern would not show up well in the months prior to that time. This particular factor has received unusual attention this year because of the amount of attention it is now the custom to pay to the monthly earning statements. There are several ways of showing how these factors work out in the case of the Great Northern. One is, for instance, the detail that in April the road operated with a ratio of 89.5, whereas in August its ratio was but 65.2. There were other reasons for this marked improvement than the ore traffic alone, but it is true, nevertheless, that in April the Great Northern moved no ore, whereas in August its ore loading averaged about 12,000 or 13,000 cars a week.



The Great Northern

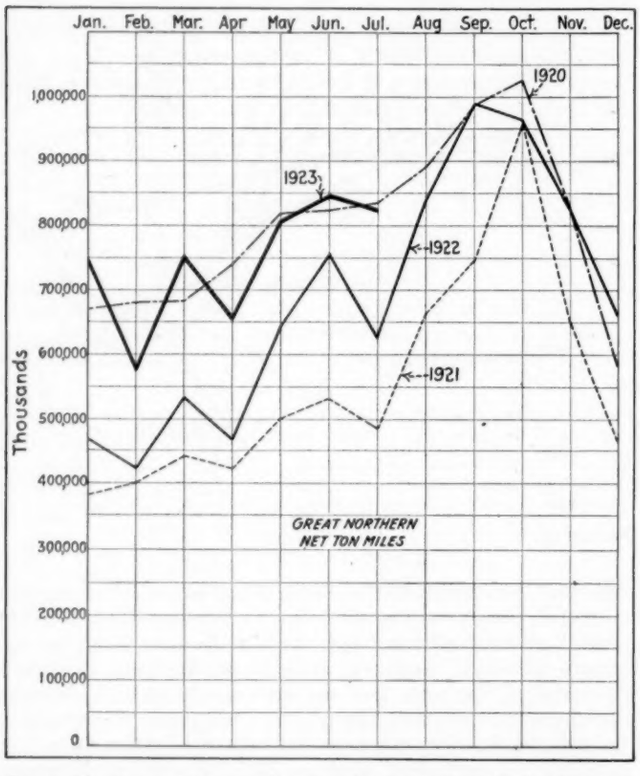
August Best Month Since Fall of 1921

The Great Northern in August, 1923, had a net operating income of $3,005,800, making it the best month which it has reported since the fall of 1921. President Ralph Budd, in a statement issued a short while ago, said that the September net earnings would be even greater than those for August, and as he put it, "Barring a slump in business which is not at present in sight, indications are that Great Northern's net operating income for the last four months of 1923 will approximate the good showing of 1921." In the last four months of 1921 the net operating income approximated

$12,000,000, which is of special interest because the net operating income for the whole year 1921 was $12,866,411, practically all of which was earned in the last four months of the year. In the first eight months of 1923, the Great Northern had a net operating income of $9,766,967, according to the recently issued August earnings statement.

If President Budd's statement proves correct this means that the Great Northern should earn in 1923, a net operating income of about $21,000,000, which will compare with $17,276,598 earned in 1922, and will approach a figure double the net operating income that the property earned in 1921, or in 1918 or 1919. It is expected that the 1923 net, in case President Budd's estimate of the net for the last four months of this year proves correct, will be sufficient with the Great Northern's outside income to allow it to earn between 5 and 6 per cent on its stock. It does not, therefore, put the Great Northern on a pre-war average of earnings. The Great Northern's pre-war average of net operating income, as based on the standard return, which was the average of the net operating income for the three years ending June 30, 1917, was $28,666,681. Prior to last year the Great Northern paid seven per cent dividends.

There are several factors which must be taken into account in an analysis of the Great Northern figure of net railway operating income of $9,766,967, reported for the first eight

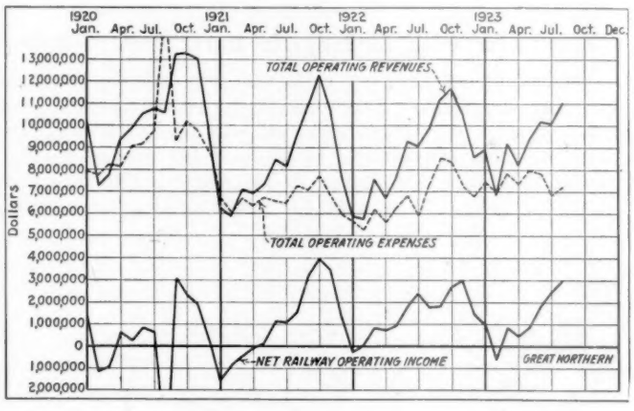


Great Northern Tonnage Shows Marked Seasonal Variation

months of 1923, besides those which have already been mentioned. It should first of all be noted that this figure compared with a net for the first eight months of last year of $8,248,122. The gross income for the first eight months of 1923 has been approximately $12,000,000 greater than in the first eight months of 1922. On the other hand, there was an increase of over $10,000,000 in operating expenses; of this $5,000,000 was in transportation expenses, which of course was naturally to be expected from the increase in traffic. There was an increase of about $2,000,000 in maintenance of way and an increase of $4,500,000 in maintenance of equipment. This increase in maintenance of equipment charges has been a familiar feature in the accounts of practically all of the railroads of the country, and it has been necessitated by the shop strike of last summer and fall and by the programs carried out by the several railroads to bring back to normal the equipment conditions resulting from federal control and the business depression of 1921. The Great Northern had a particularly interesting situation in the shop strike because it was one of the earliest roads upon which the strike was called off by the shopmen which action was taken as a result of a clean-cut victory by the railroad company.

Improvement in Equipment Conditions

The Great Northern, a year ago, had a fairly unfavorable equipment situation. On July 1, 1922, it had 13.3 per cent



By Far the Greater Part of Great Northern Net Is Earned in the Summer and Fall

of its freight cars in bad order and 17 per cent of its locomotives. On September 1, 1922, its locomotives unserviceable were 23.8 per cent of the total in service. This condition was not improved greatly throughout the early part of 1923 because on July 15, for example, the percentage of locomotives held for repairs requiring over 24 hours was still 26.3 per cent. More recently, however, a decided improvement has been shown in the situation so that on September 15, 1923, the locomotive condition was represented by a bad order figure of 14 per cent, and on the same date the percentage of bad order cars had been brought down to 5.4. The first of these figures, it will be noted, is better than the standard which the American Railway Association's program established as a goal to be reached on October 1.

The Great Northern, in 1922, handled 11,175,315 tons of iron ore. The extreme degree in which this traffic fluctuates from year to year is indicated by the fact that this compared with a figure of about 5,048,120 tons of 1921. In 1920, however, ore tonnage totaled 14,755,241 tons. It is generally understood that the Great Northern management expected in 1922 a greater tonnage than was actually handled. The traffic did run at a high level for a period of several months, but it declined somewhat earlier in the fall than was expected. For 1923, the management has estimated a total of 17,000,000 tons which, if realized, would break all previous records. This ore tonnage is a peculiar feature to the Great Northern, and the development of the ore carrying business is, without exaggeration, one of the most notable features of Great Northern's history. The ore moves from the Missabe range to the Allouez docks at Superior, a haul of about 100 miles. The movement is in 7,000-ton trains. The economical manner of operation, however, is counteracted by the variable volume of the business from year to year, and by the fact that it is confined to the lake season only, the entire plant lying idle for the other months of the year.

In 1922 Great Northern results were affected by the shop strike already referred to in some detail, and by the unfortunate situation which existed in the northwestern region on account of car supply. This year, fortunately, conditions are very different. President Budd is authority for the statement that the road now has an ample car supply, and that the road's fall gross income will not be cut into by reason of lack of equipment as it was last year. He has said, also, that coal costs will be considerably lower this year than last. Coal prices, he said, would average $1.25 a ton less in the last four months of this year than they did the same period of last year, which will represent a saving of over $1,000,000.

The conclusion that might be drawn from these details about the present situation of the Great Northern is that the underlying factors affecting the situation of that road still confront it with a condition which is not without its difficulties, but that there are, on the other hand, certain features whose tendency is decidedly optimistic. It seems quite apparent that the road will cover its present five per cent dividend requirements in 1923. It is also apparent that the net for 1923 should be the best which the road will have reported since the beginning of federal control. The fact will remain, however, that as good as 1923 may prove to be, it will unquestionably not bring the road back to its pre-war condition.

Test of Train Control on the Chicago & Alton

A DEMONSTRATION of the Chicago & Alton train control installation between Normal, Ill., and Lexington, on October 11, was attended by representatives of 18 roads with a total of 41 present. A special train consisting of two business cars, a coach and an Atlantic type locomotive left Bloomington, Ill., at 1:45 p. m. and returned to the station at 4:30 p. m.

The intermittent inductive train control system of the

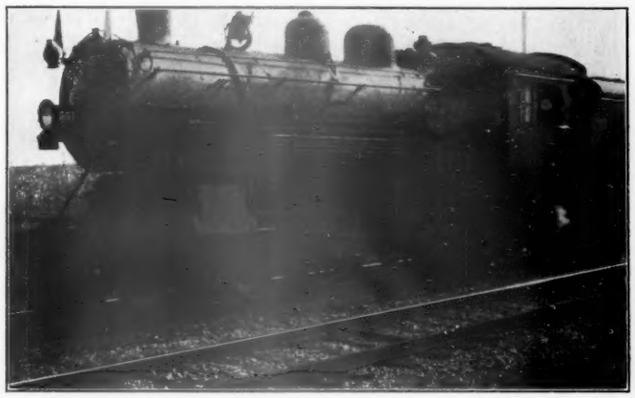
One of the Signal Locations Showing the Track Inductors

National Safety Appliance Company as described in the *Railway Age* for March 13, 1923, is in service on this 14 miles of double track, with track magnets located at the signals, which are provided with an overlap to provide proper braking distance. At 11 locations a simple automatic stop feature is used, while at one location (the first signal north of the southbound distant signal at the Normal interlocking plant), the track sections are arranged for a speed control of 40 m.p.h. through the yards. The use of this magnet for such a purpose is a special application of the system and this speed restriction is independent of the signal indication. The same features may be used where it is desirable to enforce speed restrictions on approaching a crossing or at any other point.

At this same interlocking the southbound distant signal is equipped for speed control only, with a limit of 30 m.p.h. in order to compel the engineman to approach the home signal under control. Four locomotives are equipped with the automatic train control apparatus, two of which are in passenger service and two in freight service.

Tests Prove Satisfactory

In the first test, signal 146 was at "proceed," while the track magnet was purposely disconnected to give a surprise test. The location was approached at a speed of 58 m.p.h. and the train was brought to a stop by an application of the



C. & A. Passenger Locomotive Equipped with National Safety Appliance Company's Apparatus

brakes in a space of 2,211 ft., during which period no action was taken by the engineman, the engine working steam all the while thus simulating a dead man test.

Test No. 2 was made at signal 144 at a speed of only 2 m.p.h. to demonstrate the ability of the apparatus to operate at very low speed. On this test the signal was at "stop" with the track magnet de-energized and the brakes were applied automatically on passing the track element.

Test No. 3 at signal 142, was another high speed test similar to test No. 1 the train being operated at 58 m.p.h. On passing the track magnet the train was stopped automatically in approximately 2,400 ft. with the steam working and traveling on a descending grade.

In the next test, which was a zero speed test, the receiving element on the locomotive was spotted directly over an energized track magnet. The magnet was then purposely de-energized to see if an automatic brake application would result. This caused a brake application and the locomotive could not be moved from its position without bleeding the train line. However, the brakes could have been released promptly by breaking the seal and manipulating the hand release valve on the stop valve in the locomotive. The broken seal would then show that the device has been operated in service.

On all tests either at high or low speed over track magnets which were at "clear" the apparatus functioned as designed, *i.e.*, no automatic application of the brakes was made.

IN THE MIDDLESEX COUNTY COURT at New Brunswick, N. J., on October 11, five indictments charging manslaughter were returned by the grand jury against the Pennsylvania Railroad Company; this action being taken in connection with an explosion at New Brunswick, on September 5, when several carloads of powder were blown up on a bridge over the Lincoln Highway. The indictments charge the company with carelessness in the handling of the powder cars.

Le Boutillier to Head Long Island

GEORGE LE BOUTILLIER, vice-president of the Long Island, has been chosen as president to succeed Ralph Peters, whose death on October 9 was reported in the *Railway Age* of October 13.

Mr. Le Boutillier was born on February 2, 1876, at Cincinnati, Ohio, and was educated at the University of Cincinnati. He entered the service of the Pennsylvania, Lines West, on August 1, 1895, and since that date has been continuously in the service of the Pennsylvania System or its subsidiary, the Long Island. On November 1, 1900, he was promoted to assistant division engineer and, on July 1, 1903, to division engineer. After spending almost eleven years in this capacity he was on February 1, 1914, transferred to the operating department as superintendent. On March 1, 1920, he was promoted to general superintendent at Harrisburg, Pa.

Early in the present year, Mr. Peters who was approaching the age of 70 when he would retire under the Pennsylvania's pension rules, chose Mr. Le Boutillier to succeed him. Mr. Le Boutillier, consequently, was elected vice-president of the Long Island with the understanding that he was to work with Mr. Peters, gradually taking over the active management of the property. As it happened, however, Mr. Peters did not have to retire, his sudden death taking place just a little more than a month before his seventieth birthday.

George Le Boutillier

The Long Island, while a road serving a relatively small area, has an exceedingly dense traffic and it serves a rapidly growing section. In the 18 years during which Mr. Peters was its president he saw the number of passengers it carried per annum increase from 18,000,000 to 80,000,000—440 per cent—and an increase of 100 per cent in its ton-miles of revenue freight. A similar increase in the years to come would not be surprising. The road passes through urban areas for a great part of its mileage, a portion of which is electrified. The future will probably see more electrification and more intensive development with respect to added tracks, separation of grades and other facilities.

One of the problems which Mr. Le Boutillier will have to solve before long will be the working out of a satisfactory relationship between the railroad and the city's rapid transit lines. The Long Island now provides train service between outlying points within the city limits of New York and the heart of Manhattan Island and Brooklyn. These outlying sections are growing rapidly, thus taxing the facilities of the railroad to handle the traffic. The city authorities have not been disposed to provide rapid transit facilities to the extent needed by these places now being served by the Long Island. The railroad has taken the position that it cannot efficiently carry on a rapid transit business and that the city should provide these facilities at points within the city limits where traffic demands it; that the railroad is equipped and designed only to handle the longer distance traffic.

Another problem which will be met before long is that of enlarging the terminal facilities in New York which are approaching the limit of their capacity. Lastly, but perhaps most important, is the grade crossing problem which is more pressing, possibly, on the Long Island than on any other road in the country. Grade crossings are constantly being eliminated, but apparently not as rapidly as the increase in the public's demand for this unremunerative expenditure—occasioned, no doubt, by the tremendous annual increase in the population of the island—with which any public utility would find some difficulty in keeping pace.

Hearing on Property Investment

WASHINGTON, D. C.

A HEARING was held before Commissioner Eastman of the Interstate Commerce Commission at Washington on October 10 on the question of the proper accounting for investment in road and equipment of three roads that have been recently reorganized, the Chicago & Eastern Illinois, the Missouri-Kansas-Texas, and the Kansas, Oklahoma & Gulf. All three companies have stated their investment in road and equipment as the amount of the securities issued in reorganization for the properties of the old company and the commission had raised the question as to whether an effort should be made to ascertain and state some figure representing the value of these securities.

W. H. Lyford, vice-president and general counsel of the Chicago & Eastern Illinois, presented a detailed statement at the hearing, accompanied by numerous exhibits describing the reorganization of that company, which was authorized by the Interstate Commerce Commission to issue or assume securities of the par value of $90,429,636. The commission has indicated to the carrier, Mr. Lyford said, the opinion that the cash value of the $45,891,400 of stock and $44,538,236 of bonds issued by the carrier should be placed at from $12,000,000 to $14,000,000 less than their face amount. There is a startling similarity between this amount of discount and the difference between the book value of road and equipment of the old company and the tentative value thereof reported by the Division of Valuation, he said. But the carrier has filed a protest against the tentative valuation and a hearing on that protest is now pending and partially completed.

It seems to the company, he said, that the plain meaning of the commission's accounting classification is, that in determining the cost of the acquisition of the railroad and of the investment of the new company, the securities which were issued and assumed by the new company in fulfillment of the contract of purchase must be given the actual cash value of the property and interests which were acquired by the new company and which formed the consideration received for such securities. The company in opening its books had followed the course usually followed by railroad companies and has complied with the commission's rule, in the belief

that the actual value of its acquired property was at least equal to the face amount of the securities issued and assumed and the other obligations imposed upon it by the orders of court and the agreement of purchase. Any order of the commission requiring the carrier to set up a discount on its securities and to that extent to reduce its investment in road and equipment must involve a valuation by the commission of the property and interests which formed consideration for the securities. As the valuation of the property by the commission has not yet been completed, Mr. Lyford contended that the commission has no power to value the carrier's property arbitrarily.

"This rehabilitated and improved railroad, shorn of all its unprofitable properties, with its valuable terminals and interests in terminal properties, with an exceptionally large amount of equipment for its mileage, with 84 operating coal mines along its lines and with a treasury well filled with cash and government securities, was purchased and paid for by the issue or assumption of securities authorized by the commission and amounting to about $91,000,000," he said.

"This carrier contends that, until the commission shall have completed its valuation of this railroad property and such valuation shall have been accepted by the carrier or sustained by decision of the court in which it may have been reviewed, the commission will have no power or right, in law or equity, to direct the carrier to reduce its charges to cost of road, or to fix, at less than their aggregate face amount, the value of the carrier's securities which, as duly authorized by the commission, the carrier has issued or assumed in payment for its railroad."

A similar position was taken by J. M. Bryson, general counsel of the Missouri-Kansas-Texas and by the Kansas, Oklahoma & Gulf. Commissioner Eastman asked counsel to discuss the matter fully in their briefs and indicated the possibility of a further hearing.

Ford's Employee Investment Plan Approved by I. C. C.

WASHINGTON, D. C.

IN ITS REPORT authorizing Henry Ford's Detroit, Toledo & Ironton to issue not exceeding $1,000,000 of investment certificates to employees, the Interstate Commerce Commission takes the position that it is its duty to encourage an experiment intended to improve the relation between employer and employee, although it says "the success of the plan is speculative." The commission observes that there is at the present time perhaps no subject of greater importance to the public than the matter of such relations and that "the field of railway operation is vast and the possibilities for improvement in personal relations are unlimited." "Every contribution should be welcomed," it adds. "The world knows the ultimate sponsor of this plan as an industrial genius. It may be that he can contribute something to the field of transportation which will be as epoch-making as some of the things he has introduced successfully in the field of industry."

The text of the report was made public on October 13, following an earlier announcement of the decision on the application.

The commission apparently, however, throws out a hint that a railroad is sometimes less profitable than the Ford Motor Company by pointing out that the motor company is in no way assuming obligation in respect of the certificates and that the railroad's earnings in recent years have not been sufficient to pay its interest obligations, although the net railway operating incomes for the first seven months of this year give promise of more than meeting the fixed charges for 1923. Also the commission imposes a condition that the proceeds of the certificates shall be used for capital purposes of the railroad, whereas the company had proposed that some of the money might be invested in securities at the discretion of the board of directors.

Commissioner Eastman dissents from the finding that the proposed issue is compatible with the public interest on the ground that the financial responsibility of the railroad, as distinguished from that of the motor company, has not yet been firmly established and that there is no assurance that the plan offers no risk greater than ought reasonably to attach to the investment of employees' savings.

The company proposes to issue certificates in denominations of $100, $500 and $1,000, pursuant to a plan of investment similar to that which the Ford Motor Company now has in effect. Any paid employee will be permitted to subscribe for investment certificates by signing an application wherein he agrees to abide by all terms and conditions set forth in such application, and by any changes or amendments thereto which the directors may make, subject to the commission's approval. Partial payments on subscriptions may be made by an employee, the amount of such payments not to exceed one-third of his wages or salary. In addition, the full amount of bonuses may be paid on such subscriptions. Employees will not be permitted to make payments on subscriptions from any other source. Payments are to be made to the various ticket agents along applicant's line of railroad, or to such agents as may be conveniently located to receive such payments. When payments aggregate $100, the employee may, upon signing proper blanks, receive a certificate in that amount. In like manner an employee will be permitted to purchase certificates in denominations of $500 or $1,000. Employees may withdraw any amount from balances shown on their cards by presenting them to a proper agent. By the terms and conditions, the proposed certificates are to be non-negotiable, non-assignable and invalid when held by any person other than an employee of the company. The certificates are to be payable upon demand at any time, subject to the right of the company to require 30 days' notice in writing of the intention of the employee to demand payment. From date of notice until payment, the certificates are to bear interest at the rate of 6 per cent per annum. They may be retired at any time by payment of the face amount in cash to the employee. Upon severance of the employee from the service, except in case of death, the certificates are to cease drawing return and, subject to the company's right to require 30 days' notice prior to payment, are to be immediately payable at their face amount, plus accrued return. The company reserves the right, at any time, to terminate or modify the plan at its option, to issue instead of certificates another form of security equally or more advantageous to the employee or to convert outstanding certificates in a similar manner.

The company represented that money received in payment for certificates was to be accounted for as a separate fund, and invested in such securities as the board of directors in their discretion may determine, or to be used by the company in making additions and betterments or for any other expense in connection with the operation of its railroad. Income from investments of the fund was to be separately kept and accounted for, and, together with interest at the prevailing rate of such part of the fund as may be used by the company for making additions and betterments to its property, or for other corporate purposes, to be applied on the return to certificate holders.

A return was to be paid semi-annually upon the certificates at such rate as may be determined by the board of directors, from income on investments of the fund, from interest on such part of the fund as may be used by the company as above stated, and from special appropriations of net earnings, if any, after reservation has been made from net railway operating income in accordance with the provisions of

section 15a of the interstate commerce act, such appropriations, in no event, to exceed 25 per cent of net earnings after making such reservation. By the terms and conditions made a part of the employee's application for certificates, the return was to be paid only if, in the discretion of the board of directors, the earnings of the applicant warranted such payment.

"Since payment of the return is not guaranteed by the applicant, but is entirely within the discretion of its board of directors," the commission says "a failure to pay it would in no way involve the applicant. The only liability to be incurred by the applicant through the issue of the proposed certificates is to pay the principal thereof at the expiration of 30 days after notice from the employee of his intention to demand payment. In the last analysis the certificates are merely short-term obligations, bearing such return, within the limits stated above, as the board of directors may see fit to pay, and in addition, entitling the employee to participate in net earnings. The only novel feature is the provision as to return." The report continues in part:

It is doubtful whether the applicant could use the income from investments made with the money received from employees in payment for certificates, to pay return thereon. Consideration of this point is unnecessary, however, as we are of the opinion that it would not be compatible with the public interest for the applicant to issue securities, the proceeds of which are to be invested in property not to be held for, or used in the service of transportation. Our order will accordingly provide that the proceeds of the certificates shall be used for capital purposes.

It is not contemplated that the inauguration and operation of the proposed investment plan will result in any increase in the applicant's operating expenses. The applicant has submitted a statement giving a general estimate of its capital needs which will require expenditures far in excess of the funds to be realized through the proposed sale of certificates. We have not considered it necessary to require a more specific showing in this respect, inasmuch as the purpose is not to raise funds for capital expenditures, but, as is stated in the application, to create a feeling, on the part of the employees, of participation in the earnings of the company in order that they may gain a spirit of interest in the welfare of the applicant beyond that of mere wage earners. It is stated that the inauguration and operation of the investment plan proposed will secure for the applicant, from its employees, a spirit of loyalty and faithfulness, which will result in more efficient and loyal service to the applicant, and thus enable it more efficiently to serve the public.

From estimates it is expected that approximately 50 per cent of the applicant's employees will avail themselves of the opportunity to participate in the plan, and, from their earnings, invest 5 per cent of their total wages or salaries per year. It is stated that at present there are approximately 2,225 employees in the applicant's service earning an average of approximately $185 per month. From this it appears that payments on account of subscriptions, if the applicant's estimate of employees participating is correct, would amount to about $123,500 per annum. However, as payments made by many of the employees on account of their subscriptions would not amount to as much as $100 per annum, the amount of certificates issued during the first year would probably not exceed $100,000.

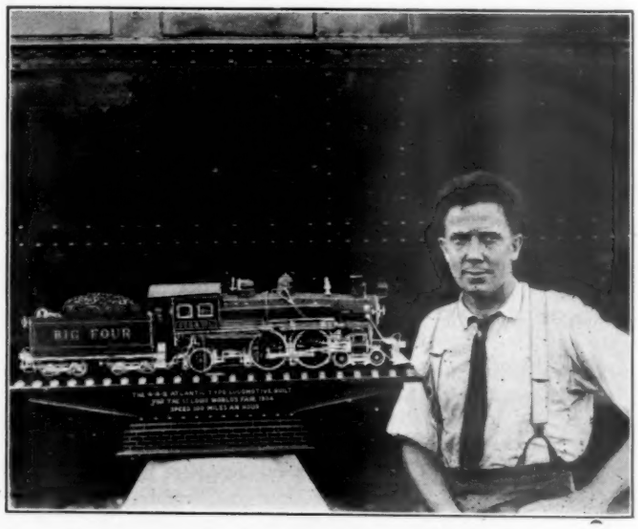
The estimate as to the number who will participate is based on the experience of successful industrial companies showing large net earnings, particularly that of the Ford Motor Company. It is not to be expected, however, that the applicant's employees will be governed by the experience of employees of that company. While the same interests that control the motor company are in control of the applicant, the motor company is in no way assuming obligation in respect of the certificates and the community of interest between the applicant and the motor company may be terminated at any time. Employees participating in the applicant's investment plan must look solely to the applicant for payment of the principal of the certificates and return thereon.

The applicant's earnings in recent years have not been sufficient to pay the interest on its funded indebtedness. From its balance sheet as of September 30, 1922, it appears that its funded debt outstanding amounted to $10,637,168, consisting of first-mortgage bonds, adjustment-mortgage bonds and equipment obligations. At December 31, 1921, first-mortgage bonds were outstanding in the amount of $1,717,000 and adjustment-mortgage bonds in the amount of $7,630,268. Under the provisions of the adjustment mortgage dated March 5, 1914, interest is payable on the adjustment-mortgage bonds out of surplus and net income, as defined in the mortgage. Interest at the rate of 5 per cent per annum is cumulative from January 1, 1919. No interest has been paid on the adjustment-mortgage bonds. On December 31, 1921, unmatured interest accrued on these bonds aggregated $1,144,330.20. This amount, together with interest since that date at the rate of 5 per cent per annum on the principal amount of adjustment-mortgage bonds, now outstanding, must be earned before the applicant will be in a position to pay a return from net income on the proposed certificates. The applicant's income accounts for the years 1917 to 1921, inclusive, showed deficits as follows:

1917	$163,112.75
1918	15,844.71
1919	447,002.52
1920	1,896,523.56
1921	530,556.25
1922 (first eleven months)	912,773.79

The deficits for the years 1919, 1920 and 1921 include interest accrued on adjustment-mortgage bonds in the amount of $381,443.40 per annum. In the income account for each of the years 1918 and 1919, there is included an item of $225,895.02, the amount of compensation which the applicant estimated it would receive from the United States Railroad Administration. Federal operations for the two years last mentioned resulted in deficits of $621,566.67 and $583,953.33, respectively. The applicant's earnings for the current year show considerable improvement. From monthly reports which the applicant has filed with us, it appears that net railway operating income for the first seven months of 1923 was $1,065,888 as compared with $689,151 for the same period in 1922. This will more than cover fixed charges for the entire year if there is no increase in fixed charges over those for 1922.

The permanent success of the applicant's plan must necessarily depend, to a large extent, upon the number of employees participating therein. The number participating will be determined, in large measure, by the applicant's ability to show net earnings. Accordingly, in view of the applicant's failure in this respect during past years, the success of the plan is speculative. This, however, is not sufficient reason for holding that the proposed issue is not appropriate for the purpose intended, as hereinbefore set forth. The applicant's representatives have expressed their confidence in the success of the plan and we can see no reason for not permitting it to be tried. The amount of the certificates outstanding at the end of a reasonable period for testing the plan should not be sufficient to cause the applicant any serious embarrassment in retiring them, should the plan prove unsuccessful and the employees demand payment of the certificates or the applicant desire to abandon the plan. The application before us is not one for the approval of the issuance of securities in the usual and ordinary case. The plan of the applicant pertains more to the matter of relation between it and its employees than to a matter of finance. It is not on an unduly large scale and therefore cannot prejudice the rights and properties of innocent bystanders. Moreover, it is not clear that our approval of the plan is required as within the contemplation of the law. The plan is an experiment, but it is only through experimentation that something new can be tested. It is our duty to encourage the experiment proposed and give it our sanction in so far as we are authorized to do so.



Model of Locomotive on New York Central Service-Progress Special

I. C. C. Orders Grain Rate Investigation

Fails to Find Reductions in West Justified on Present Record But Orders Kansas Case Reopened

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has responded to the demand for a reduction of grain rates for the benefit of the agricultural industry by ordering a general investigation of rates on grain and grain products on its own motion. The order for the investigation, dated October 11, was made public on October 16 at the same time the commission announced its decision in the Kansas grain rate case, also dated October 11, in which it held that the general basis of rates on grain, grain products and hay within the western group had not been shown upon the present record to be unjust or unreasonable, but ordered the case reopened to permit the development of a more complete record. The complaint in this case was filed last year and the arguments were presented in May.

President Suggests Rate Reductions

Earlier in the day it had been announced at the White House that President Coolidge had suggested to President Rea of the Pennsylvania that he thought it would be helpful if the railroads would place export rates on coal on a parity with the domestic rates and make some reduction in the export rates on wheat, and that Mr. Rea had promised to investigate the possibility of doing so. The White House statement, although referring to export coal rates, indicated, however, that what the President had in mind was complaints regarding certain rates on anthracite coal to Canada being on a more favorable basis than some domestic rates. Such complaints have been made by Congressmen and others from New York and Massachusetts, who have gone so far as to urge an embargo on coal shipments to Canada. It was stated on behalf of the President that he presumed there was a sound economic or railroad reason for the present coal rate adjustment but that he thought it was over-balanced by reasons of policy, that the people of the United States should feel that they are as well treated as those of Canada and that he thought it would help to promote the general good feeling that ought to exist between the transportation interests and the public if the same rates were applied to domestic and export shipments of coal.

The preamble to the order for the general grain rate investigation contained the words, "The matter of freight rates as affecting the agricultural industry being under consideration," and it is understood that the commission had at first considered an investigation of the rates on agricultural products generally. The investigation was ordered "with a view to determining whether and to what extent the rates, charges, regulations and practices of carriers subject to the interstate commerce act, in respect of the transportation of grain and grain products, in interstate or foreign commerce, are or for the future will be unjust, unreasonable or otherwise unlawful, and in such case to prescribe just, reasonable and lawful rates, charges, regulations and practices thereafter to be observed."

All carriers by rail or by water or by rail and water, subject to the interstate commerce act, were made respondents and the state authorities were notified by sending copies of the order to the governors and regulating commissions. The proceeding will be assigned for hearing at such times and places as the commission may hereafter direct.

Reduction Not Justified by Western Roads' Earnings

In its decision in the Kansas case the commission said that the reductions asked by the complainants would take from the revenues of Western roads approximately $17,000,000 to $20,000,000 annually, and that reductions in the rates alone would not solve the farmers' problem while the effect on the carriers would be serious to certain individual lines unless other means of increasing revenues or reducing expenses can be found. It was pointed out that the rates had not been shown to be unreasonable by the usual standards nor discriminating in relation to other rates and that the record had not shown how the loss in revenues which would result from the reduction sought could be made up by increases in other rates.

The commission also said that the Western roads are earning considerably less than the prescribed return and apparently less than the fair return to which they are entitled under their constitutional rights, aside from Section 15-a.

The complaint filed by the Public Utilities Commission of Kansas on behalf of all grain and hay shippers of that state, related to the reasonableness and propriety of the level of interstate rates for the transportation of grain, grain products, and hay, in carloads, between points in the western group. While violations of sections 1 and 3 were alleged, no maladjustment in relationship between particular localities and markets had been pointed out, and no particular description of traffic stated as the recipient of an undue or unreasonable preference or advantage, the commission said. Little evidence was offered to support a violation of section 3, and the complaint in that regard the commission finds not sustained.

Intervening petitions in support of the complaint were filed by the rate-regulating commissions of Iowa, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Louisiana, and Oklahoma, and also by the American Farm Bureau Federation, Atchison Board of Trade, St. Joseph Grain Exchange, Omaha Grain Exchange, Kansas City Board of Trade, Southern Minnesota Mills, South Dakota Department of Agriculture, and Southwestern Millers' League.

Several hearings were held and an extensive and voluminous record made. The evidence dealt largely with the broad agricultural and economic conditions which were said to prevail with considerable uniformity over great grain-and-hay producing areas cultivated under substantially like conditions, and which find price equalization in the same general markets.

After a review of the increases in rates made in 1918 and 1920 and of the reductions ordered in 1921 and 1922 the commission's report continued in part as follows:

Condition of the Farmers

Here, as in *Rates on Grain, Grain Products, and Hay, supra,* complainants have placed great stress upon the economic and financial condition of the agricultural industry. The agricultural industry in the West is still heavily mortgaged and deeply indebted to the banks. The labor and capital of the grain-and-hay farmer in parts of the western district receive a reward much lower than in any important gainful pursuit, and this at a time when many other industries have shaken off the depression and have made rapid and substantial strides toward recovery. In former reports we have alluded to the unusual period of readjustment which has followed in the wake of a world catastrophe. The record indicates, as of the time of submission, that agriculture had passed through the worst stages of the economic and financial depression, although recovery has been slow.

Complainants lay much stress upon the price relationship of farm products to the commodities which the farmer must buy, and to other nonagricultural commodities. Some of the latter are

quoted at prices almost double those prevailing in 1913, but pay freight rates little higher, relatively, compared with their 1913 rates than do agricultural products, the wholesale price of which during 1922 averaged but 33 per cent higher than 1913 prices, although the total money value of farm products in the United States was 45 per cent higher in 1922 than in 1913. Examination of the Department of Labor's index numbers of wholesale prices by groups, using 1913 as a basic, shows that for 1922 the index number for farm products was 133 as compared with an average of 149 on all commodities. For the first four months of 1923 the index numbers were 142 and 158, respectively. The index for farm prices of crops for 1922 was but 113. It is this price relationship situation that constitutes the foundation of complainants' contention that, taking into consideration the prices received by the farmer for his product, compared with prevailing prices on other commodities, agriculture is contributing more than its proportionate share to the maintenance of the transportation machine in the western group. Generally speaking, the present rates on the commodities in issue are on an average 45 per cent higher than the 1913 rates. Rates on other commodities are approximately 52 per cent higher than the 1913 basis. Assuming that all rates were reduced by the exact amounts authorized by our decisions, those on wheat and hay are now 117.5 per cent of the rates in effect August 25, 1920, the date of the last general increase, on coarse grains 105.75 per cent, and on commodities generally 121.5 per cent. While we said in *Reduced Rates, 1922, supra,* that "the needs of commerce can not be met if rates are to fluctuate with market prices of commodities," this, of course, would not apply to any permanent or long-persistent shift of price levels. The element of value of a commodity and the principle of "what the traffic will bear" would be given due weight in such a case.

Summing up, it may be said that up to the time the case was submitted prices to the western farmer for his product had somewhat improved since our decision in *Rates on Grain, Grain Products, and Hay, supra,* and that he thus had more dollars with which to pay his debts. The purchasing power of his product had not, however, materially improved. On the whole, the record seemed to indicate a hopeful trend.

Removal of the remainder of the 1920 increases on wheat and a continuation of the 90 per cent basis on coarse grains, as requested by complainants, would mean an aggregate reduction of slightly more than 14 per cent in all grain rates in the western group, and, it is estimated, would take in revenue from the carriers approximately $17,000,000 to $20,000,000 annually. It is impossible to do more than estimate just what this would mean to the individual farmer. Obviously it would be more material to the farmer at a greater distance from market than to one who ships for shorter distances. Assuming an average saving in freight charges of $50 per farm annually, it is inferable from a perusal of the farm prices of wheat, which during 1922 ranged from $0.88 to $1.21 per bushel, that such fluctuations from week to week and even from day to day are frequently just as important as a substantial change in freight rates. Reductions in freight rates from western farms to western primary markets alone will not solve the farmers' problem, while the effect on the carriers' revenues of the reduction sought would be serious to certain individual lines, unless other means of providing revenue or reducing expenses can be evolved to compensate them for the loss which would be sustained. There have been brought to our notice insistent claims that relief should be secured by reduction in the export rates. Grain and its products in 1922 constituted 28 per cent of the Minneapolis, St. Paul & Sault Ste. Marie Railroad's tonnage; 20 per cent of the Burlington's; 15 per cent of the Santa Fe's; and 14.5 per cent of the North Western's. Wheat alone constituted almost 50 per cent of all tonnage originating in North Dakota and shipped over the Great Northern.

Effect of a Reduction on Carriers' Revenues

The carriers have also presented many of the same arguments that were advanced in *Rates on Grain, Grain Products, and Hay, supra.* For example, they point to the excessive loss-and-damage claims on grain and grain products compared with other traffic, and to the special services, such as transit, accorded to this traffic on the basis of the through rates from point of origin to destination. They also claim that the improvement in the financial condition of the farmer is indicated by the record. They place their main reliance, however, upon their own financial circumstances, and upon the requirement of the law that we initiate, modify, establish, or adjust rates so that carriers as a whole or in designated rate groups will earn a fair return upon the aggregate value of the railway property held for and used in the service of transportation. The rate of return as fixed by us is shown as 5.75 per cent, and the 1922 return of carriers in the western group averages less than 4 per cent. For the first four months of 1923 the average was about 4.1 per cent. The subsequent and present rates of return are not in the present record as to the carriers in the group as a whole or as to particular carriers.

In all proceedings involving general reductions in rates, we have to look to the future and exercise our best judgment on the record before us. In former cases reduction and savings in carriers' operating expenses, present or in prospect, and prospective increases in tonnage were translated into reductions in rates. The situation which now confronts us is more difficult. In spite of the fact that the past year has been better than the average from the standpoint of tonnage handled, the revenues of the defendants are not shown on this record to have been excessive or in violation of law. In fact, as stated, carriers in the western group have been and are now earning considerably less than the prescribed return, and apparently less than the fair return to which they are entitled under their constitutional rights entirely independent of section 15a. If, as complainants contend, grain, grain products, and hay in the western group are now bearing more than their proportionate share of the transportation burden the inference is that other commodities are paying less than their fair share. The latter have not been pointed out. Seemingly, from the record, it is improbable that a reduction in the present rates on the commodities in issue would so increase the movement of these commodities as to enable the carriers to make up to any appreciable extent the loss in revenue should a general reduction in these rates be ordered. Of prime importance to the agricultural industry and to the country in general is an adequate and efficient transportation service. The extent to which a marked rate reduction would disable the carriers generally or particular carriers in the performance of this service is of great consequence.

This record affords no basis even for a suggestion as to a reallocation of the transportation burden, nor could we in fairness to the shippers of other commodities make such readjustment without giving them opportunity to be heard. This is not to say that reductions in rates can in no case be made without contemporaneous increases if carriers are not making the prescribed return. If the usual tests of the reasonableness of rates, approved by experience and valid in law, show the basis as to any commodity to be too high it would be our duty under section 1 of the act to find such rates to be unreasonable. Many of the rates here assailed have been prescribed by us; others are depressed by competition of various kinds. So far as the usual tests of the reasonableness of rates shown by the record, other than perhaps the values of the commodities when viewed from the standpoint of existing prices, may be applied to the question before us, they do not indicate that the general basis of rates on the commodities here in issue is unreasonably high. The case has not been tried upon the theory that by comparison with rates upon the same commodities in other territories, or between analogous commodities in the same territory, or with reference to the earnings of the carriers under investigation, any reductions can or should be made. These comparisons, when properly made, we have found to be helpful. Upon the present record we would be led to conclude that the general basis of rates on grain, grain products, and hay within the western group has not been shown to be unjust, unreasonable, unduly prejudicial, or otherwise in violation of the interstate commerce act.

While this case has been before us under consideration since its submission, we have given careful study to the situation presented in the western group. It is desirable that the existing record should be supplemented by a showing as to the important changes in conditions which have since occurred, and as to the lack of changes if the permanency of trends is thereby made more manifest. It will also be helpful in the proper disposition of so important a matter if the usual tests in rate cases are applied so far as they are serviceable, and if the record is made to cover more comprehensively the situation over all of the territory affected instead of being so largely centered in a particular portion of it. The present and prospective financial and service needs of the carriers should also be developed. Without indicating views as to the final disposition of the matter, the case will be reopened and set for further hearing to give interested parties an opportunity to develop the foregoing and other pertinent matters. We will enter an order to that effect.

Commissioner Campbell wrote a dissenting opinion on the ground that the record justified the reduction asked. Commissioner McChord also dissented and Commissioner McManamy did not participate in the consideration or disposition of the case.

THE RAILWAY TICKET PROTECTIVE BUREAU, in its campaign to eliminate ticket scalping in Denver, Colo., has secured the conviction of five scalpers; and five Union station employees have been removed from service. On September 27 the association obtained warrants for the arrest of eight members of a ticket scalping ring and laid plans to break up the activities of the remainder of the group. The action of the association follows the failure of the Denver police and business interests to stop the practice.

Co-operation in Distribution of Refrigerator Cars

Proposed Rules Based on Extensive Experience—Provision for Enlisting Full Confidence of Shippers

By H. P. Dreyer, Brookfield, Mo.

CO-OPERATION between shippers and carriers is essential in securing the maximum efficiency in the use of refrigerator cars.

If shippers in general were more thoroughly conversant with the methods employed by the carriers in the distribution, and could agree with them upon a set of rules for the handling of refrigerator cars, the service would be improved, and wastage of transportation reduced to a minimum. Following is outlined a plan for co-operative handling of refrigerator cars, divided as follows:

Instructions for Shippers,
Carriers,
(a) Agents,
(b) Car Distributors,
(c) General Car Distributors.

The proposed plan provides for a rating to be given regular shippers by taking the total tons of fresh fruit or vegetables and other perishables to be shipped during the current week, dividing the number of tons by 15 (the recognized estimated standard load for refrigerator cars), the result to be termed the "gross weekly rating"; this to be the basis on which cars shall be distributed to shippers, except that the shipper who makes requisition for an occasional car will be rated, during periods of car shortage, on a daily basis of not to exceed one car a week. His order will take its regular turn with other orders on the day following the date on which it is placed. New ratings will be furnished by regular shippers each week and equalization of the shortages and overages of the previous week's performance will be made during the following weekly period. In case any shipper inflates his orders for the purpose of influencing the car supply or for any other reason, provision is made in the rules for adjustment so as to arrive as nearly as possible at the correct percentage of cars furnished.

Experienced field-men should make a canvass of the situation when reports from ordinary sources do not adequately reflect the true conditions which must be known in order to correctly estimate the number of cars that will be required for the shipping season. Such special reports are important to the carriers for the purpose of taking preparatory measures for the advance movement of cars into originating territory. The record of the previous year's performance is of vital interest for comparison, and when completed by districts should be sent to the general car distributor.

It should be borne in mind that the carriers are distributing car-days, not cars. The arrangement to distribute cars on the car-day basis does not affect the shipper's car supply when he loads and bills out the same day car is placed. It does, however, affect the car supply when shippers delay cars by not loading and billing on the same day placed, as one car charged to a shipper for two days counts as two car-days, or one car furnished each day for two days, thereby increasing the shipper's debits. The number of cars actually loaded does not determine the percentage of cars supplied.

The work-sheet referred to in these rules is kept by the station-agent for each shipper; by the division car distributor for each station, and by the general car distributor for each division. The reports are similar in each instance and will show cars ordered, cars furnished, and daily and weekly percentages. With this information available for each division, the car distribution officer will have an accurate record for distributing the cars, and for calculating the "overs" and "shorts" on equalization.

Consideration should also be given to the method of distribution as between cars in transit billed to a certain point for further distribution, and cars billed to local points for actual loading, as the transit cars do not enter into the percentage of distribution until they are placed for loading. A very successful plan for handling the transit cars promptly is to forward them in lots of 25 or 50 cars, or in train-lots giving the train a symbol number for passing records at each train-terminal point. Non-producing bridge-line carriers that enjoy the loaded haul should be called upon to give preferential return handling to transit empties during periods of car shortage.

Meat-packers' refrigerators and dairy-line cars assigned for all-year-round regular service should be handled strictly in accordance with instructions of the owner. "Line cars" or "peddler cars" for handling perishable l. c. l. merchandise are exempt from these rules, as the loading of these cars makes them available for country-station orders; and the cars, when released, are taken into account for carload perishable freight shipments in the territory where released, or else the surplus cars are subject to tide order instructions referred to in Rule No. 1 of "Instructions and Suggestions for General Distributors."

During heavy seasonal movements of perishable freight, reports of the estimated movement should be sent by the distribution officer to all interested lines.

Uniform blanks that will classify the loading and show the number of cars handled for the various services under an organized plan would be valuable, and the following rules are formulated with that in view.

A.—Instructions for Shippers

1. To establish a weekly rating, shippers will advise the carrier's agent in writing each Monday morning of the total number of tons of fresh fruit and vegetables on hand and conveniently located for prompt loading, to be shipped during the ensuing week.

2. The shippers will use the weekly rating as a basis for ordering cars and the daily order or daily rating must not exceed the number of cars that can be loaded each day, and total orders for the week must not exceed the combined rating.

3. Where shipments are irregular, shippers will be rated on the daily basis and will receive their pro-rata share of the available cars on the day following the placement of order, which during periods of car shortage must not exceed one car per week. All orders exceeding one car per week are to be handled in accordance with Rule 2 of these instructions.

4. Shippers will make requisition on the carriers' agent each day for empty cars required for loading, showing the following information:

> Number of cars wanted during the next 24 hours (in units of 15-ton cars) and whether pre-cooled, iced, under ventilation or heater protection.

NOTE—The rating will not be considered as an order for empty cars, but as the basis for ordering same.

5. The term "prompt loading" as used in these rules is

intended to mean that a car placed not later than 2 p. m., must be loaded, and the billing instructions tendered before the close of the day on which it is placed; failing which such car will be charged against the shipper's allotment as an additional empty for each succeeding day held for loading or billing instructions.

6. Cars placed between 2 p. m. and the time the shipper ceases work for the day, if loaded on the day placed will be charged against the shipper's allotment for that day.

7. If a shipper's tonnage is reduced on account of adverse weather conditions, or by disposing of goods through another source within the weekly period, in mutual interest he should adjust his rating to avoid over-ordering of cars, which causes overs in percentage of cars supplied.

8. To protect districts where abnormally heavy crops await shipment, and also to avoid assigning too many cars where the crops are below normal, the actual production, coupled with the volume of fresh fruits and vegetables ready for movement, will be the basis for rating stations; and the performance of previous seasons must not be considered as a basis for ordering cars.

9. In the event of ventilated box or common box cars being used as a substitute (when conditions are favorable) such cars will not be counted against the shipper's pro-rata share of the available refrigerators; but the shipper will reduce his rating to avoid over-ordering of refrigerator cars.

10. Orders for cars at a station that is served by more than one carrier shall be filed with each carrier's agent; such combined requisitions must not exceed the shipper's gross daily rating, and will specify the number of cars ordered from each carrier.

NOTE—When no cars are required from any carrier for loading the order should read: "No cars wanted."

11. All cars placed for loading during each period of 24 hours ending at 2 p. m. should be charged against the shipper on the day when such period ends, except Sundays and holidays; but when cars are loaded on Sundays and holidays, they will be charged against the shipper's allotment for that week, figuring Sunday as the first day of the week, subject to Rule 6 of these instructions.

12. Cars will be charged against shippers on the car-day basis except on Sundays and holidays, subject to Rule 11.

13. When cars placed in time for loading but not loaded on the same day, on account of shipper's disability, do not equal the number of cars ordered, the order for that day will be reduced to the number of cars furnished, making the shipper's car supply for that day 100 per cent.

14. When shippers persistently over-rate their weekly requirements and fail to comply with these rules, the matter should be reported to the general car distributor so that an inspector can be sent to the station to effect a correction. If, after notice from the railroad, a shipper fails to comply with these rules, the carrier's agent will give the shipper what he considers a fair rating and cars will be distributed accordingly.

15. Private refrigerator cars assigned for specified shipments will be placed for loading as directed by the shippers to whom they are permanently assigned. Such cars will be designated as "assigned cars." All other refrigerators will be designated as "unassigned cars."

16. If the number of assigned cars placed for loading during the weekly period equals or exceeds the shipper's pro-rata share of the available car supply, he shall not be entitled to any unassigned cars. The assigned cars, together with the shipper's requirements will be eliminated, and the remainder of the available car supply pro-rated to the other shippers, based on a percentage revised by reason of such elimination.

17. If the number of assigned cars placed is less than the field percentage, based on a revised percentage, the shipper shall be entitled to receive unassigned cars in addition thereto, to make up his pro-rata share, within weekly periods.

18. If a shipper receives more or less cars than he is entitled to, during the current weekly period as provided for in Rule 11 (and after eliminating assigned cars as provided in Rule 16) he will be charged with a surplus or credited with a shortage accordingly, and the discrepancy will be adjusted within the following weekly period.

B.—Instructions for Agents

1. The daily rating, or the daily order for cars, if less than the rating, shall be the basis for car distribution.

2. The agent will distribute cars between shippers at his station on a percentage basis, and will keep a work-sheet (Form—) of cars ordered, cars furnished, and percentage, daily. Overs and shortages on car supply resulting from this distribution shall be adjusted as between shippers at the same station on succeeding days within weekly periods.

3. Orders for cars received from one or more shippers at each station will be consolidated and transmitted to the car distributor by wire on Form.—This message shall show the general car situation.

4. Each station is to include with its daily order to the car distributor the following information:

(a) Rating for this week's loading.
(b) Number of cars ordered yesterday for today's loading.
(c) Number of empty and partly loaded cars on hand for today's loading.
(d) Unconsigned loads awaiting billing.
(e) Empty cars enroute to reach station for today's loading (give the probable time of arrival).
(f) Empty cars wanted for loading tomorrow.

NOTE—The car distributor will fill out column "e" when the agent has not received the information.

5. Groupings of ratings or orders and pooling of refrigerator cars as between packing houses or shippers located outside of the same station will not be permitted.

6. Empty cars placed at blind sidings for loading must be carded on both sides of the car, showing to what shipper consigned.

7. Cars may be delivered to a feeder-line (interurban or otherwise) for loading, subject to these rules.

NOTE—If the feeder-line regularly so served has connections and interchange arrangements with other trunk lines, joint reports will be rendered to each carrier the same as at junction points (see Rule 10 of Instructions to Shippers).

8. Empty cars must not be delivered to a trunk line for loading at stations beyond the switching district without authority from the car distributor and general distributor, who will be governed by the car supply on his line and by tariff rates. Such cars will be known as "assigned cars" (see Rules 16, 17 and 18 of Instructions to Shippers) and subject to these rules. Daily reports, Form ——, showing initials and numbers of cars applied must be sent to the car distributor.

9. Junction point agents will be held responsible for the handling of cars delivered to a connecting line for loading and unloading *within the same switching district,* subject to Rule 10 of Instructions to Shippers, and will report to the car distributor any failure on the part of the receiving line to return cars in accordance with the rules.

10. When empty cars set out for loading are not spotted, they will not be charged against the station on that day, but will be considered as transit cars. Special report, Form —— will be sent to the car distributor as authority to omit cars from the field supply, on account of railroad disability.

11. Agents or yardmasters who have charge of the distribution of cars at the station will be held responsible to the division car distributor.

12. If an order is over-filled and too many cars are assigned to a station for loading, the surplus should be billed to a point designated by the car distributor unless he authorizes the cars held for following day's loading; this matter should be covered by tide order instructions. (Subject to Rule 10 of Instructions for Agents).

13. Terminal points will send to local agents jointly with the car distributor, advance telegraphic reports of the number of refrigerator cars they will receive during the day by trains, so that agents may prepare switch lists for trainmen, outlining how the cars are to be spotted for the different shippers; and to enable agents to give shippers advance notice of the cars they will receive for the day's loading.

14. At the close of the day's business, agents will render a daily report by mail to the car distributor, Form ——, showing:

(a) Weekly rating in 15-ton cars,
(b) Cars ordered for today,
(c) Cars placed; including empties, part loads and unconsigned loads awaiting billing (see note),
(d) Cars loaded today,
(e) Cars billed today,
(f) Cars left over empty,
(g) Part loads left over,
(h) Unconsigned loads left over.

This will be known as the official report to govern the percentage of car distribution.

NOTE—Item c to have two columns, one showing cars placed by 2 p. m., and one showing cars placed after 2 p. m.

15. Agents at junction points where cars are interchanged with feeder-lines will make separate reports showing the operation for the day on these lines, similar to the reports made for other stations.

C.—Instructions for Car Distributors

1. A work-sheet will be kept by the car distributor showing the number of cars ordered and furnished each station on his division, and the percentage of cars applied on orders accumulated by weekly periods.

2. Reports received from agents, Form ——, will be transcribed on Form —— each day, and consolidated into one report for the general distributor. This report will show the field percentage for the division. These reports to be cumulative for the ensuing week, and show the overs and shortages on car supply. (See Rules 2 and 4 of instructions for agents).

3. Overs and shortages resulting from this distribution must be adjusted on succeeding days within the weekly period. (This covers distribution of cars between stations).

4. Wire reports, Form ——, should be made to the car distributor two or three times daily by yardmasters or junction agents, showing the transit cars leaving terminals and junctions and showing where billed. Train lots assigned to a division should be handled under symbol numbers, and passing reports should be wired jointly to the division car distributor and the next passing point.

5. Orders may be placed with the connecting division for the number of cars required if authorized to do so by the general distributor; and station billing will be given on work orders for cars required at local points, provided the cars do not pass through a terminal point; otherwise cars will be billed to terminal points for a certain division or for local distribution. No one terminal should be required to bill cars locally, except for cars required in the immediate territory, adjacent to that terminal. (See rules 1, 2 and 3 of instructions to general distributor).

6. The division car distributor will be held responsible to the general distributor for distribution of refrigerator cars between stations and terminals.

D.—Instructions and Suggestions for General Distributors

1. The aim of the general distributor should be to give all concerned in the handling of cars as much latitude as possible so that cars will be kept moving without having to wait for billing instructions. One of the successful plans for securing prompt handling of cars is to give the division car distributor what is known as "tide order instructions." This permits the free movement and handling of cars and enables yardmen to anticipate train movements, exchange of cars, balancing power, filling of local orders without interfering with the free movement of cars enroute to connecting divisions, saves switching and enables yardmen to group their trains properly.

2. Empties in transit will not be charged in the percentage distribution of cars until they reach the division to which they are assigned.

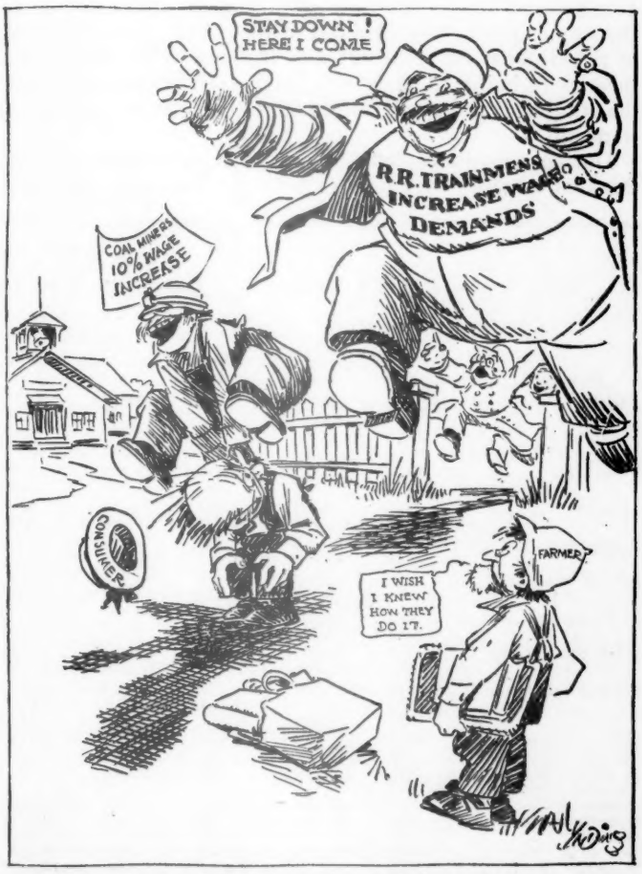
3. Empty transit cars of the same class in tide movement may be exchanged, to facilitate local loading, when such handling will not interfere with the percentage of distribution arranged for by the general distributor.

4. When there is a regular or seasonal movement of loaded refrigerator cars from one carrier to another, it shall be the duty of the receiving carrier to equalize the interchange within weekly periods provided the delivering line serves notice that equalization is desired.

5. The general field percentage will be made from the consolidated daily report rendered by the division car distributor of the cars ordered and furnished on each operating division; and overs and shorts resulting from this distribution will be adjusted on succeeding days within weekly periods. (See Rules 2 and 4 of instructions to agents and Rule 2 of instructions to car distributors).

6. The general distributor will render a weekly report to the division car distributors showing the percentage of cars applied on each operating division's order. Current and weekly records showing car distribution will be kept on file in each car distributor's office, for each operating division, for the information of shippers.

* * * *


STAY DOWN ! HERE I COME
R.R. TRAINMENS INCREASE WAGE DEMANDS
COAL MINERS 10% WAGE INCREASE
CONSUMER
FARMER
I WISH I KNEW HOW THEY DO IT.

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That's the Trouble with This Game. If You Bend Over for One the Whole School Wants to Play Leap Frog

Responsibility of Labor Union Members

THE PUBLICITY BULLETIN of the Buffalo, Rochester & Pittsburgh, a leaflet issued occasionally for the promotion of a good understanding between the railroads and their customers, and which now has reached Volume 2, No. 25, appears, in its latest issue, with the foregoing heading; and the topic dealt with is the need of being a good and loyal union member if you are to be any member at all. Following is the substance of the article:

In a recent bulletin we dwelt on the responsibility of the citizen voter. Another voter who has particularly heavy responsibilities, is the member of a labor organization. In the past, organized labor was satisfied to confine its activities between its members and those hiring labor. Today labor organizations are extending their field—insurance, banking, railroading and politics. Whether this extension of their field is a proper move or not, we are not going to discuss, but the added responsibility of the individual union member is obvious. Sometimes we feel that the labor member is just as negligent in his union responsibilities as is many a citizen with his National, State and town politics. Let us put it in the form of a parable.

Once there was an industry of such magnitude that the commercial and industrial welfare of the Nation depended upon its profitable and continuous existence. Many union men were employed—men of skill and integrity, who had built their homes, raised their families and prospered on the wages received. They had no grievances which were not adjustable by local representation. So these members paid their union dues regularly, seldom attended their local meetings and were willing to let well enough alone. Then along came a younger and less responsible generation of members. As is the way of youth, they dreamed of the pot of gold at the foot of the rainbow and set about with their youthful and untried theories to build an industrial Utopia. A strike order was the ultimate result, and for months the industry was at a standstill.

During this time some of the older and more careful thinkers came to the employer with the statement that they were not in sympathy with the strike and offered their services in any capacity.

"No," said the employer. "You are a union man. When this strike is over you will again have to work with your fellow members: Your wife and children will have to live in the midst of other members' families. How would you and your family be treated if you didn't stick to the union now? The thing for you to do," continued the employer, "is to be a good union member in every sense of the word. Attend faithfully your local meetings. Educate if you must the radical youngsters whose inexperience leads them in ways already proved disastrous. Be a union member of broad vision and shoulder the responsibilities of your organization manfully and steadfastly."

This parable aptly illustrates our thought of the responsibility of the union member and we bespeak a careful shouldering of just such responsibility by every union employee on our system.

Freight Car Loading

WASHINGTON, D. C.

THE NUMBER OF CARS LOADED with revenue freight during the first week of October fell slightly below the record-breaking figure of the week before but the total, 1,079,690 cars represented an increase of 125,738 cars as compared with the corresponding week of last year and of 180,009 cars as compared with 1921. Loading of grain and grain products continued below the figures for the corresponding weeks of the past two years but all other classes of commodities showed increases. Loading of miscellaneous freight, 388,999 cars, showed an increase of 52,455 cars as compared with last year.

Meanwhile the freight car surplus has shown some reduction and there have been some scattering shortages. The average surplus for the period September 23 to 30 showed a reduction to 41,745 cars, while the shortage reported increased to 15,331 and for the period October 1 to 8 the surplus showed a further reduction to 34,138 and the shortage had increased to 16,160.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO, WEEK ENDED SATURDAY, OCTOBER 6, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L. C. L.	Miscellaneous	Total revenue freight loaded	Corresponding period	
										1923	1922	1921
Eastern	1923	9,918	3,396	52,787	3,192	5,906	6,897	68,990	102,613	253,699	.....	.....
	1922	7,921	3,229	54,676	1,871	5,822	4,096	63,336	92,093	.....	233,044	215,173
Allegheny	1923	2,515	3,002	53,797	5,896	3,592	11,954	53,751	83,715	218,222	.....	.....
	1922	3,090	3,375	55,901	4,730	3,206	9,214	45,807	71,308	.....	196,631	174,005
Pocahontas	1923	289	360	29,548	529	1,801	140	6,670	5,583	44,920	.....	.....
	1922	177	383	16,981	286	1,340	29	5,055	3,635	.....	27,886	33,229
Southern	1923	3,398	2,652	23,050	989	22,790	1,612	41,650	47,616	143,757	.....	.....
	1922	3,588	2,402	21,608	898	18,173	1,163	38,027	43,034	.....	128,893	128,445
Northwestern	1923	16,255	11,660	9,536	1,369	18,775	43,573	31,257	47,553	179,978	.....	.....
	1922	17,927	9,553	10,483	1,451	15,677	30,091	28,675	37,026	.....	150,883	138,026
Central Western	1923	12,943	16,842	18,031	300	11,811	2,571	36,144	68,009	166,831	.....	.....
	1922	13,155	16,435	19,428	399	8,107	2,292	33,612	62,265	.....	155,693	143,003
Southwestern	1923	4,701	3,642	4,992	165	8,584	498	15,791	33,910	72,283	.....	.....
	1922	4,216	3,713	6,697	96	5,066	560	13,391	27,183	.....	60,922	67,800
Total West. Dists.	1923	33,899	32,144	32,559	1,834	39,170	46,822	83,192	149,472	419,092	.....	.....
	1922	35,298	29,701	36,608	1,946	28,850	32,943	75,678	126,474	.....	367,498	348,829
Total All Roads	1923	50,019	41,554	191,741	12,440	73,259	67,425	254,253	388,999	1,079,690	.....	.....
	1922	50,074	39,090	185,774	9,731	57,391	47,445	227,903	336,544	.....	953,952	.....
	1921	54,457	33,767	182,595	6,068	49,319	25,763	234,923	312,789	.....	.....	899,681
Increase compared	1922	.....	2,464	5,967	2,709	15,868	19,980	26,350	52,455	125,738	.....	.....
Decrease compared	1922	55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared	1921	.....	7,787	9,146	6,372	23,940	41,662	19,330	76,210	180,009	.....	.....
Decrease compared	1921	4,438	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October 6	1923	50,019	41,554	191,741	12,440	73,259	67,425	254,253	388,999	1,079,690	953,952	899,681
September 29	1923	50,896	41,624	200,970	12,936	75,491	69,172	253,176	393,009	1,097,274	977,791	904,831
September 22	1923	48,906	41,751	182,524	13,339	73,629	75,527	250,369	374,391	1,060,436	961,138	873,641
September 15	1923	54,462	39,785	171,830	13,704	74,760	76,661	249,262	380,116	1,060,580	937,221	852,552
September 8	1923	46,782	35,716	152,996	13,543	66,256	71,694	217,670	324,201	928,858	823,247	749,552

Compiled by the Car Service Division, American Railway Association.

General News Department

The Committee on Railway Mail Pay announces that W. A. Worthington, vice-president of the Southern Pacific, New York City, has been chosen acting chairman, in place of Ralph Peters, deceased.

The American Railway Association will hold a special session, for the consideration of important matters of policy, on Thursday, November 8, at 10:30 a. m., in the rooms of the Yale Club, 44th street, New York City.

President Samuel Rea of the Pennsylvania, E. J. Pearson, president of the New York, New Haven & Hartford, and Ralph Budd, president of the Great Northern, have been among recent callers upon President Coolidge at the White House.

The Alaska Railroad has been put out of business for about 100 miles, at its southern end, by severe rains, washing away sections of the road bed and damaging bridges. This is the substance of a dispatch dated October 16. No estimate of the amount of damage is given.

"Labor," the weekly newspaper published by the 16 associated railroad labor organizations, which was formerly published by the Plumb Plan League, is erecting a four-story building at Washington, D. C., for its offices and printing plant, under the name of the Labor Co-Operative Educational and Publishing Society. The paper is now said to have a circulation of 400,000.

The Interstate Commerce Commission has modified its train control order so as to permit the Richmond, Fredericksburg & Potomac to makes its installation of automatic train control, as required by the order, between a point 1.7 miles north of Richmond, Va., and a point 5.7 miles south of Potomac river bridge, Washington, D. C., instead of between the points named in the order.

Armed bandits held up the southbound Southern Pacific express No. 13, about 17 miles south of Ashland, Oregon, on October 11, killed three trainmen and a mail clerk and escaped with an unknown amount of loot. The robbery occurred as the train was emerging from tunnel 13 south of Siskiyou, on or near the state line. The engine was nearing the tunnel entrance when an explosion blew away part of the roof of the tunnel and caused part of it to cave in on the train. As the train was brought to a halt two men advanced to the locomotive, where they shot the engineer, fireman and another man. The robbers then went to the mail car and blew open the door with a charge of dynamite, which explosion killed the clerk and set fire to the car. The mail safe was then opened and the contents taken. The explosion shattered windows in some of the passenger cars and passengers were cut by glass.

Association of Railway Executives' Washington Office to Move Nov. 1

The Washington office of the Association of Railway Executives will, after November 1, be located at 920 Transportation building, 17th and H streets, North West. The new telephone number will be Main 9020.

Chicago Railroad Terminal Problem

At the call of Mayor Dever there was a conference in Chicago on Tuesday, last, to discuss this problem in relation to the straightening of the Chicago river. Among those present were members of the Board of Aldermen, the Railway Terminal Commission and the Chicago Plan Commission; A. H. Smith, president, and George A. Harwood, of the New York Central, and J. E. Gorman and L. C. Fritch of the Rock Island. The railroads expressed a willingness to negotiate with the city but they desire to wait until the city presents definite plans.

Annual Dinner of New York Railroad Club on December 6

The New York Railroad Club will hold its fifth annual dinner at the Hotel Commodore, New York, at 6:15 p. m. on December 6. Reservations may be made until November 24 by application to H. M. Norris, secretary to the president, Interborough Rapid Transit Company, 165 Broadway, New York; subscription price, $5 a person.

Census of Electric Railways

The Department of Commerce, Washington, has issued a compilation relating to the miles of line operated by electric railways in the United States in 1922, as compared with 1917 and 1912. These figures do not include electrified tracks of steam-railroads. The length of road operated in 1922 aggregated 43,934 miles as compared with 44,808 miles in 1917, a decrease of 2 per cent, and 41,033 in 1912, an increase of 7.1 per cent for the 10-year period. The figures show decreases in mileage in 32 states and small increases in 16 states in 1922 as compared with 1917. The most important losses of trackage occurred in Massachusetts (366 miles) and Ohio (260 miles).

Rock Island Observes Seventy-First Birthday

On October 10, the Chicago, Rock Island & Pacific, observed the seventy-first anniversary of its birth by celebrations at several places, the principle function being a banquet held in Chicago, on the evening of the 10th, under the auspices of the Rock Island Club, of which L. F. Shedd, general supervisor of safety, is president. This dinner, which was held in the Florentine room of the Congress Hotel, was attended by about 200 officers and employees including Charles Hayden, chairman of the board of directors; J. E. Gorham, president; M. L. Bell, vice-president and general counsel, and Hal Ray, director of the newly created department of personnel and public relations, all of whom made short talks. The remainder of the evening was devoted to an informal dance in the Sherman Hotel. Music at both the dinner and the dance was provided by the Rock Island Orchestra, an organization of about 25 pieces. Earlier in the day a reunion of the pensioned employees and their families was also held at Chicago. It is the plan to conduct similar celebrations every year.

A Big Return from Fuel Association Prize Contest

The prize paper contest announced by the International Railway Fuel Association, in which a prize of $100 was offered through the association by Eugene McAuliffe, special representative to the president, Union Pacific, for the best paper on fuel economy submitted by an engineer, fireman, conductor, brakeman or switchman, and later supplemented by additional offerings of the *Railway Age*, Railway Review and various railroads, has met with a remarkable response. Approximately 1,600 papers were received by J. B. Hutchison, secretary of the association, within the time limit of the contest, which will close October 31. Owing to the tremendous volume of work entailed in preparing the papers for the judges and by the judges in the performance of their duty in selecting the prize winner, it has been impossible to announce promptly the name of the author of the prize winning paper. The work is progressing, however, and an announcement may be expected within a short time.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923

Name of road		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures.	Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
Akron, Canton & Youngstown	Aug.	170	$227,435	$1,485	$236,249	$39,044	$26,171	$8,591	$67,913	$8,378	$150,097	63.50	$86,152	$71,821	$37,285	$25,606
	8 mos.	170	1,711,183	7,592	1,790,426	266,911	168,475	65,780	535,337	72,358	1,108,403	61.90	682,023	568,785	349,243	321,718
Alabama & Vicksburg	Aug.	141	204,268	75,043	299,591	43,066	40,792	9,169	99,032	11,874	205,975	68.80	93,616	65,752	75,904	604
	8 mos.	141	1,596,622	492,239	2,249,484	335,695	399,587	73,623	773,411	95,380	1,692,819	75.10	556,665	311,197	382,964	187,196
Vicksburg, Shreveport & Pacific	Aug.	188	289,116	108,171	419,734	56,054	69,321	11,219	119,881	14,412	273,108	65.00	146,626	114,834	105,310	—7,164
	8 mos.	182	1,878,518	777,751	2,871,866	384,602	497,027	88,793	929,466	109,242	2,028,958	70.60	842,908	589,392	$10,678	197,145
Ann Arbor	Aug.	293	430,689	50,954	512,998	74,817	106,385	8,985	179,076	12,642	381,917	74.40	131,081	111,380	91,181	33,986
	8 mos.	293	3,024,549	326,499	3,524,445	435,884	872,335	72,023	1,506,173	103,513	2,989,926	84.80	534,519	360,325	114,780	302,915
Atchison, Topeka & Santa Fe	Aug.	8,981	12,338,171	4,051,029	17,683,514	2,782,811	4,357,738	285,435	5,303,808	326,853	12,966,325	73.30	4,717,189	3,270,370	3,334,154	2,865,330
	8 mos.	8,950	89,703,588	30,579,303	131,062,326	18,191,544	31,832,363	2,311,394	41,799,379	2,695,688	96 341,651	73.50	34,720,675	24,777,966	26,197,409	18,758,440
Gulf, Colorado & Santa Fe	Aug.	1,908	1,743,111	395,896	2,252,329	337,973	495,890	45,246	682,756	62,951	1,622,733	72.00	629,596	548,328	463,105	578,736
	8 mos.	1,908	11,741,428	2,720,844	15,414,297	3,233,579	3,937,707	358,314	5,224,735	500,629	13,241,098	85.90	2,173,199	1,523,066	1,035,898	1,057,805
Panhandle & Santa Fe	Aug.	858	673,211	134,305	840,781	144,464	241,619	6,775	227,839	17,281	637,875	75.90	202,906	179,584	139,923	33,648
	8 mos.	858	3,994,246	915,911	5,208,380	902,768	1,748,776	61,280	1,656,327	141,677	4,506,888	86.50	701,492	499,450	251,836	—177,019
Atlanta & Westpoint	Aug.	93	123,809	83,063	238,010	37,653	43,721	9,088	87,508	11,321	104,241	81.60	43,769	27,491	12,046	12,624
	8 mos.	93	1,096,571	617,324	1,933,160	290,072	323,562	75,883	678,454	93,394	1,493,977	77.20	439,183	325,008	250,583	98,580
Western of Alabama	Aug.	133	148,302	72,624	246,301	37,331	51,782	9,769	76,050	11,038	190,273	77.20	56,028	40,456	32,182	44,432
	8 mos.	133	1,184,872	565,287	1,928,489	258,024	370,776	79,306	610,185	89,983	1,436,423	74.50	492,066	387,004	372,030	270,063
Atlanta, Birmingham & Atlantic	Aug.	639	294,437	66,813	389,638	71,492	93,081	19,133	168,863	15,768	368,398	94.50	21,240	8,521	4,613	—26,333
	8 mos.	639	2,437,855	398,821	3,044,809	539,983	719,979	172,276	1,517,475	123,780	3,074,214	100.90	—29,405	—134,179	—181,763	—444,573
Atlantic Coast Line	Aug.	4,860	3,575,867	1,241,132	5,254,139	933,484	1,497,783	104,168	2,074,062	142,062	4,769,302	90.80	484,837	33,672	169,930	431,482
	8 mos.	4,860	37,537,873	12,289,058	53,902,812	6,737,773	11,597,830	870,636	19,289,528	1,162,219	39,937,593	74.10	13,965,219	10,932,961	10,352,213	9,815,241
Charleston & Western Carolina	Aug.	342	254,379	45,186	312,365	68,221	44,414	7,297	126,901	6,492	253,325	81.10	59,040	43,040	31,904	—5,673
	8 mos.	342	2,233,768	293,939	2,644,105	426,809	355,610	56,322	1,073,185	52,765	1,964,381	74.30	679,724	571,305	433,025	358,605
Baltimore & Ohio	Aug.	5,212	17,943,064	3,145,142	22,502,756	2,350,512	5,710,781	322,483	8,092,632	491,204	17,105,739	76.00	5,397,017	4,603,622	4,253,223	—648,190
	8 mos.	5,212	142,806,771	20,112,328	173,788,951	17,563,217	44,019,704	2,595,950	64,033,583	3,862,836	133,124,635	76.60	40,664,316	34,093,411	30,955,742	15,157,172
Baltimore & Ohio Chic. Terminal	Aug.	83	.....	.....	302,427	47,705	56,468	1,617	165,116	9,995	286,597	94.80	15,830	—24,648	9,142	44,236
	8 mos.	83	.....	.....	2,473,214	274,784	355,410	15,107	1,419,669	78,533	2,179,919	88.10	293,295	—32,641	266,618	719,824
Staten Island Rapid Transit	Aug.	23	74,887	140,252	258,124	44,612	31,453	1,716	123,108	14,354	215,243	83.40	42,881	30,291	13,947	—33,130
	8 mos.	23	647,037	851,460	1,716,590	255,712	278,372	14,958	946,021	112,316	1,607,379	93.60	109,211	—6,373	—133,403	—332,108
Bangor & Aroostook	Aug.	616	300,778	73,488	396,272	90,156	110,248	4,616	136,585	17,270	361,441	91.20	34,831	5,036	59,766	—46,907
	8 mos.	616	3,522,721	594,099	4,309,181	928,489	955,004	35,375	1,400,848	144,288	3,478,704	80.70	830,477	502,144	871,377	1,324,787
Belt Ry. of Chicago	Aug.	32	.....	.....	621,308	49,774	53,929	2,659	249,271	9,506	365,139	58.80	256,169	217,174	175,131	133,690
	8 mos.	32	.....	.....	4,791,795	401,372	468,936	19,580	2,092,153	78,444	3,060,485	63.90	1,731,310	1,415,573	1,238,452	1,095,829
Bessemer & Lake Erie	Aug.	228	2,282,331	33,780	2,351,263	135,598	749,430	14,891	544,082	28,885	1,465,713	62.30	885,550	729,350	789,585	661,333
	8 mos.	228	13,115,939	238,030	13,633,051	882,815	4,035,703	123,132	3,511,956	226,037	8,750,960	64.20	4,882,091	4,173,323	5,301,020	1,435,628
Bingham & Garfield	Aug.	34	49,209	34	50,818	5,469	4,382	1,186	13,979	4,396	29,515	58.10	21,303	13,569	24,002	2,556
	8 mos.	34	292,032	49	303,943	57,455	37,770	10,630	77,720	30,380	215,159	70.80	88,784	27,810	122,650	—72,513
Boston & Maine	Aug.	2,286	4,506,881	2,394,324	7,776,026	1,012,301	1,644,156	53,148	3,287,245	208,161	6,229,556	80.10	1,546,470	1,302,105	989,928	601,042
	8 mos.	2,286	35,921,975	15,447,696	58,059,404	8,014,787	12,967,875	434,534	28,177,060	1,696,018	51,473,200	88.70	6,586,204	4,670,157	769,066	4,575,215
Brooklyn Eastern District Terminal	Aug.	9	95,677	.....	100,477	5,440	13,798	25	41,228	5,252	65,743	65.40	34,734	28,432	28,632	59,444
	8 mos.	9	971,718	.....	1,037,722	45,170	112,476	2,809	382,293	41,403	584,151	56.30	453,571	384,685	386,925	381,383
Buffalo & Susquehanna Ry. Corp.	Aug.	253	234,617	4,861	243,363	65,764	91,615	1,616	71,410	8,551	238,956	98.20	4,407	—3,993	41,108	—16,741
	8 mos.	253	1,803,545	42,931	1,876,801	338,632	649,026	16,064	582,094	70,869	1,656,358	88.30	220,443	124,842	525,337	328
Buffalo, Rochester & Pittsburgh	Aug.	589	1,709,576	169,380	1,961,732	503,217	556,930	25,474	732,992	45,030	1,845,470	94.10	116.262	81,262	216,262	—414,601
	8 mos.	589	13,840,068	1,187,184	15,648.672	2,733,739	5,123,611	204,376	5,932,607	347,723	14,301,583	91.40	1,347,089	1,066,620	2,144,883	—198,733
Canadian Pacific Lines in Maine	Aug.	233	75,991	41,132	132,871	63,417	44,432	4,992	87,196	3,389	203,426	153.10	—70,555	—85,555	—99,489	—32,181
	8 mos.	233	1,463,070	297,237	1,884,802	379,142	393,307	37,418	911,797	29,926	1,751,590	92.90	133,212	13,212	—84,284	13,584
Carolina, Clinchfield & Ohio	Aug.	309	720,858	56,013	792,713	98,110	225,161	24,815	210,823	21,970	571,782	72.10	220,931	170,227	232,678	255,068
	8 mos.	309	5,790.127	369,395	6,275,972	612,753	1,742,705	200,826	1,740,779	158.477	4,453,424	71.00	1,822,548	1,420,942	1,876,359	2,082,532
Central of Georgia	Aug.	1,920	1,436,437	521,587	2.180,771	300,363	491,240	68,777	846,549	82,490	1,794,992	82.30	385,779	79,479	312,814	383,935
	8 mos.	1,920	12,173,462	3,799,791	17,657,042	2,222,851	3,642,323	554,836	6,931,187	653,159	14.070,592	79.69	3,586,450	2,759,642	2,726,646	2,469,159
Central of New Jersey	Aug.	694	3,833,074	1,245,738	5,353,627	507,194	1,571,122	36,833	1,958,637	104,835	4,198,808	78.40	1,154,819	843,480	876,172	87,271
	8 mos.	694	30,158,273	6,631.504	39,066,661	3,617,924	10,755,192	305,770	16,361.718	831,713	32,028,649	82.00	7,038,012	4,653,794	4,207,921	1,847,082
Central Vermont	Aug.	533	495,672	128,980	746,884	137,624	125.715	10,022	328.850	20,625	624,466	83.60	122.418	101,312	57,210	14,750
	8 mos.	533	4,293,547	866,540	5,796,910	852,255	1,019,164	104,868	3,089,907	164,807	5,240,724	90.40	556,186	389,885	—53,927	73,470
Chesapeake & Ohio	Aug.	2,552	7.832,536	1,154,910	9,473,221	1,198,930	2.570,196	83,902	2,999,611	189,188	7,065,776	74.60	2,407,445	2,101,361	2,113,269	803,860
	8 mos.	2,552	55,560,451	7,657,493	66,676,076	7,964,432	18,371,430	686,058	22,237,080	1,483,332	50,963,732	76.40	15,712.344	13,259.730	13,517,422	12,139,106
Chicago & Alton	Aug.	1,050	2,268,246	644,334	3,139,909	468,924	661,716	58,852	969,670	64,076	2,211,815	70.40	928,094	843,876	646,319	—257,025
	8 mos.	1,050	15,890,800	4,505,042	22,152,612	2,729,097	5,799,903	471,382	7,655,419	444,011	17,081,633	77.10	5,070,979	4,392,776	3,381,899	836,570

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
Chicago & Eastern Illinois	Aug.	945	1,721,424	476,104	2,370,147	257,347	798,299	45,550	886,844	64,716	2,062,520	87.00	307,627	169,448	221,929	13,824
	8 mos.	945	14,096,772	3,303,275	18,810,327	2,039,161	5,998,089	357,215	7,335,530	551,905	16,374,846	87.10	2,435,481	1,491,960	2,107,073	1,235,091
Chicago & Northwestern	Aug.	8,403	10,109,759	2,995,527	14,561,969	2,478,358	2,969,979	180,543	5,561,785	341,974	11,585,386	79.60	2,976,583	2,220,396	1,910,292	1,932,944
	8 mos.	8,403	75,052,903	20,164,678	106,259,229	14,892,388	25,481,550	1,367,519	44,950,938	2,703,945	89,837,249	84.50	16,421,980	10,390,636	8,473,704	11,560,635
Chicago, Burlington & Quincy	Aug.	9,405	10,649,686	2,927,948	14,899,151	2,706,318	3,498,561	250,804	5,052,335	362,072	11,988,777	80.50	2,910,374	2,295,176	2,088,063	1,131,461
	8 mos.	9,399	83,094,980	19,017,784	113,048,039	15,671,617	27,623,622	1,912,356	42,410,104	2,886,465	91,316,862	80.80	21,731,177	14,874,887	13,641,925	14,760,273
Chicago Great Western	Aug.	1,496	1,650,399	417,680	2,246,481	542,421	420,345	65,040	878,142	53,050	1,972,895	87.80	273,586	200,252	62,862	135,079
	8 mos.	1,496	12,852,215	2,863,193	17,119,538	2,783,823	3,735,071	517,249	7,199,404	436,103	14,772,763	86.30	2,346,775	1,722,606	920,024	123,546
Chicago, Indianapolis & Louisville	Aug.	657	1,113,480	289,335	1,537,779	158,301	335,922	34,011	493,982	31,025	1,068,626	69.50	469,153	371,566	262,500	79,305
	8 mos.	657	8,695,717	2,129,235	11,962,998	1,203,123	2,645,337	264,038	4,281,471	269,776	8,785,168	73.40	3,177,830	2,530,526	1,460,682	1,084,255
Chicago, Milwaukee & St. Paul	Aug.	11,010	11,088,861	2,337,833	14,916,655	2,447,547	3,340,729	286,756	5,552,522	317,720	12,007,979	80.50	2,908,676	2,250,752	1,641,960	2,465,275
	8 mos.	11,016	84,630,268	16,212,413	112,478,865	15,965,280	26,873,003	1,608,853	45,053,694	2,516,209	92,468,604	82.20	20,010,261	13,943,278	9,937,971	6,416,964
Chicago, Peoria & St. Louis	Aug.	247	107,763	14,985	133,629	19,483	17,902	2,856	58,610	8,760	107,611	80.50	26,018	26,018	11,195	—57,934
	8 mos.	247	722,311	107,011	908,675	148,419	173,810	18,390	509,423	71,960	922,002	101.50	—13,327	—79,913	—180,267	—323,229
Chicago River & Indiana	Aug.	19	.....	.....	625,896	82,733	63,236	747	231,930	11,114	389,760	62.30	236,136	201,520	264,404	255,762
	8 mos.	19	.....	.....	4,937,949	479,668	530,183	7,668	1,936,845	93,409	3,047,993	61.70	1,890,176	1,599,366	2,202,724	1,739,313
Chicago, Rock Island & Pacific	Aug.	7,635	7,927,315	2,514,620	11,250,723	1,031,215	2,361,990	171,713	4,156,125	267,998	8,028,131	71.40	3,222,592	2,812,602	2,218,440	1,007,649
	8 mos.	7,635	57,769,510	17,545,103	81,477,218	9,890,512	19,311,478	1,507,101	34,404,993	2,071,681	67,455,313	82.10	14,021,905	10,226,949	7,090,944	8,215,726
Chicago, Rock Island & Gulf	Aug.	461	413,129	72,297	519,352	66,834	73,784	13,011	186,077	5,135	346,035	66.60	173,317	160,952	114,824	72,815
	8 mos.	461	2,777,492	593,511	3,684,306	613,041	585,363	105,170	1,759,688	120,171	3,193,377	86.70	490,929	392,178	227,650	462,484
Chic., St. Paul, Minn. & Omaha	Aug.	1,749	1,782,949	579,388	2,546,983	427,829	510,605	35,717	1,031,582	72,398	2,088,097	82.00	458,886	322,769	303,343	710,512
	8 mos.	1,749	12,965,632	4,131,646	18,501,608	2,433,893	3,913,255	278,505	8,652,469	568,227	15,910,720	86.00	2,590,888	1,541,560	1,516,061	2,218,271
Cincinnati, Indianapolis & Western	Aug.	347	308,287	44,132	378,660	50,081	83,678	11,607	139,806	17,803	304,289	80.30	74,371	51,856	44,314	17,286
	8 mos.	347	2,516,249	311,785	3,063,683	356,171	660,122	92,246	1,277,544	151,125	2,548,205	83.20	515,478	354,286	191,924	28,434
Colorado & Southern	Aug.	1,099	736,646	236,131	1,051,739	237,183	285,822	13,051	411,158	41,696	1,001,132	95.20	50,607	—18,153	—14,238	110,728
	8 mos.	1,099	6,136,962	1,397,673	8,168,043	1,252,414	2,438,938	109,706	3,330,243	340,313	7,537,144	92.30	630,899	103,840	164,984	1,087,238
Ft. Worth & Denver City	Aug.	456	629,143	213,972	886,936	91,924	179,597	12,427	248,534	35,316	575,111	64.80	311,825	273,907	305,733	253,392
	8 mos.	456	4,234,148	1,342,169	5,962,273	636,152	1,453,822	101,765	1,904,238	278,171	4,402,292	73.80	1,559,981	1,238,423	1,564,854	1,691,832
Wichita Valley	Aug.	271	87,435	23,945	117,438	16,313	11,385	54	39,824	1,497	68,063	58.00	49,375	42,136	29,869	10,077
	8 mos.	267	636,428	164,394	854,118	142,781	86,951	314	323,713	13,106	562,068	65.80	292,050	242,065	152,029	69,313
Columbus & Greenville	Aug.	167	94,424	35,385	136,299	39,381	15,755	2,856	53,914	8,452	120,022	88.10	16,277	13,758	—575	20,025
	8 mos.	167	704,197	234,114	993,871	294,662	149,544	25,634	370,643	78,472	917,862	92.40	76,009	75,524	—26,899	64,190
Delaware & Hudson	Aug.	886	3,787,031	531,737	4,566,740	359,846	1,141,423	44,329	1,617,993	138,154	3,316,431	72.60	1,250,309	1,164,648	1,121,867	—649,835
	8 mos.	886	27,317,192	2,676,101	31,892,374	2,790,064	8,571,193	311,507	13,226,446	1,122,798	26,241,980	82.30	5,650,394	4,968,155	4,587,168	788,570
Delaware, Lackawanna & Western	Aug.	993	5,504,304	1,439,979	7,749,005	810,126	1,674,997	108,566	2,962,026	160,720	5,777,017	74.60	1,971,988	1,511,351	1,608,079	—326,328
	8 mos.	993	42,532,658	9,359,536	58,579,466	5,241,233	14,362,894	838,414	24,935,208	1,245,165	47,068,273	80.30	11,511,193	8,060,101	8,760,368	4,929,162
Denver & Rio Grande Western	Aug.	2,593	2,138,457	667,513	3,102,056	770,447	899,738	51,309	1,152,215	84,769	3,031,888	97.70	70,168	—98,090	—38,046	729,969
	8 mos.	2,593	15,480,701	3,827,203	21,235,066	3,413,497	6,490,557	390,239	8,129,960	662,513	19,484,467	91.80	1,750,599	403,592	1,047,546	4,345,899
Denver & Salt Lake	Aug.	255	206,918	42,459	274,949	74,075	76,097	1,565	90,241	6,207	248,185	90.30	26,764	17,764	18,340	27,634
	8 mos.	255	1,275,771	188,702	1,635,959	371,168	593,967	9,719	613,583	46,977	1,635,414	100.00	545	—71,594	—49,322	—144,740
Detroit & Mackinac	Aug.	375	120,286	37,146	172,588	39,714	64,721	1,956	61,381	5,969	173,469	100.50	—881	—10,868	—5,977	40,583
	8 mos.	382	889,268	242,442	1,238,615	268,082	392,940	16,156	487,377	46,028	1,209,605	97.70	29,010	—34,451	32,064	—40,991
Detroit & Toledo Shore Line	Aug.	61	321,951	.....	322,926	32,320	36,811	2,593	89,285	13,362	174,371	53.90	148,555	130,255	48,140	68,506
	8 mos.	61	2,799,468	.....	2,836,474	240,405	277,539	19,186	848,401	62,275	1,447,806	51.00	1,388,668	1,242,268	554,977	608,013
Detroit, Toledo & Ironton	Aug.	454	924,946	12,258	957,597	136,748	94,963	6,421	299,418	23,590	560,504	58.50	397,093	378,201	229,835	—300,404
	8 mos.	454	6,697,944	79,037	6,919,700	902,980	1,019,046	51,392	2,350,866	186,179	4,436,428	64.10	2,483,272	2,374,143	1,295,723	388,747
Duluth & Iron Range	Aug.	279	1,071,913	17,206	1,192,645	108,507	134,947	1,250	263,235	17,229	525,684	44.10	666,961	579,027	585,805	639,019
	8 mos.	279	4,733,286	147,920	5,341,537	781,334	1,042,564	9,723	1,675,208	148,169	3,660,361	68.50	1,681,176	1,292,720	1,314,583	1,499,840
Duluth, Missabe & Northern	Aug.	305	3,479,928	14,252	3,801,351	204,271	204,039	3,134	563,706	19,669	995,634	26.20	2,805,717	2,482,979	2,468,888	2,025,985
	8 mos.	305	12,451,992	158,851	13,887,844	1,335,498	1,550,697	23,622	2,805,777	163,067	5,889,234	42.40	7,998,610	6,357,044	6,323,743	3,974,576
Duluth, South Shore & Atlantic	Aug.	591	389,092	121,734	580,172	95,167	68,026	5,890	215,868	10,320	401,593	69.20	178,579	150,520	133,263	84,097
	8 mos.	591	2,773,280	792,322	3,906,994	529,934	593,389	49,901	1,868,749	94,114	3,181,848	81.40	725,146	495,018	343,011	—74,748
Duluth, Winnipeg & Pacific	Aug.	178	149,091	22,043	175,498	44,569	43,777	2,994	75,914	7,684	174,944	99.70	554	—8,221	—21,756	500
	8 mos.	178	1,429,553	179,910	1,661,963	285,694	344,304	27,780	705,618	56,562	1,419,351	85.40	242,612	114,724	86,757	—18,567
Elgin, Joliet & Eastern	Aug.	459	2,143,328	20	2,418,243	242,114	519,926	12,473	728,544	35,975	538,770	63.60	879,473	769,076	547,881	21,707
	8 mos.	459	17,145,542	87	19,218,598	1,464,020	4,565,292	96,913	5,902,566	294,148	12,320,654	64.10	6,897,944	6,144,642	4,572,604	3,481,842
El Paso & Southwestern	Aug.	1,139	679,518	149,747	888,844	213,123	179,581	32,871	271,806	44,549	750,613	84.40	138,231	32,394	21,160	263,160
	8 mos.	1,139	6,626,134	1,389,136	8,461,586	1,537,491	1,690,193	282,490	2,350,264	331,356	6,264,934	74.00	2,196,652	1,406,694	1,237,500	1,409,528
Erie	Aug.	2,039	8,530,373	1,499,783	10,787,760	1,607,044	2,915,693	144,066	3,740,315	292,617	8,738,541	81.00	2,049,219	1,703,427	1,857,357	—1,846,887
	8 mos.	2,039	65,743,186	9,230,130	80,740,143	8,901,776	22,466,938	1,095,222	32,150,892	2,283,117	67,263,361	83.30	13,476,782	10,777,183	11,597,888	1,597,840

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues			Operating expenses						Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
			Freight.	Passenger.	Total (inc. misc.)	Maintenance of—Way and structures.	Maintenance of—Equipment.	Traffic.	Transportation.	General.	Total.					
Chicago & Erie	Aug.	269	856,604	106,732	1,034,418	153,275	194,016	21,343	424,921	32,705	821,332	79.40	213,086	160,481	—168,994	—283,970
	8 mos.	269	7,982,102	535,907	9,086,200	957,064	1,574,935	166,461	3,549,216	295,645	6,537,052	71.90	2,549,148	2,133,774	—432,382	—1,064,219
New Jersey & New York	Aug.	45	23,903	120,732	150,419	21,827	20,959	1,342	66,024	4,703	114,855	76.40	35,564	32,221	1,802	—32,683
	8 mos.	45	199,585	820,486	1,061,804	128,801	172,485	10,800	551,609	32,805	896,495	84.40	165,309	138,001	—91,495	—108,541
N. Y., Susquehanna & Western	Aug.	135	289,169	78,125	408,816	69,892	72,114	3,257	211,857	11,428	368,548	90.10	40,268	8,045	8,339	—117,832
	8 mos.	135	2,433,892	498,657	3,334,754	433,936	599,690	28,816	1,818,179	96,613	2,977,218	89.30	357,536	105,461	75,310	—212,775
Evansville, Ind. & Terre Haute	Aug.	137	146,413	7,496	161,047	43,838	5,593	1,535	60,317	3,364	107,719	66.90	53,328	50,045	7,780	—32,586
	8 mos.	137	1,004,826	54,218	1,115,444	295,076	74,536	14,210	461,707	24,312	849,726	76.20	265,718	232,799	—59,488	—289,966
Florida East Coast	Aug.	764	512,941	226,592	860,395	179,422	230,370	10,514	332,116	29,082	783,296	91.00	77,099	—37,704	—82,165	—202,455
	8 mos.	764	6,387,693	3,341,068	11,082,761	1,428,376	1,634,028	108,729	3,279,583	239,186	6,789,458	61.30	4,293,303	3,492,600	2,951,166	2,311,646
Fort Smith & Western	Aug.	249	91,783	26,944	127,913	25,733	23,051	4,578	41,787	7,048	102,994	80.50	24,919	19,119	13,836	25,769
	8 mos.	249	744,877	184,679	1,008,333	203,984	201,752	38,614	359,988	58,008	868,651	86.10	139,682	92,783	53,145	43,422
Galveston Wharf Co	Aug.	13	.....	.....	122,979	38,687	4,373	673	30,880	2,975	90,977	74.00	32,002	11,982	12,031	47,726
	8 mos.	13	.....	.....	877,732	286,002	30,722	5,184	244,848	25,651	671,388	76.50	206,244	64,156	65,895	—30,657
Georgia R. R.	Aug.	328	381,193	135,083	549,439	61,725	106,708	20,946	198,365	20,190	407,881	74.20	141,558	135,246	131,979	41,956
	8 mos.	328	2,934,765	863,530	4,053,238	435,327	769,436	165,753	1,696,294	158,257	3,225,344	79.60	827,894	774,458	708,315	420,365
Georgia & Florida	Aug.	405	121,780	22,430	154,238	18,830	18,341	8,838	59,137	7,855	113,210	73.40	41,028	34,716	23,851	1,799
	8 mos.	405	925,957	157,473	1,151,657	144,121	149,586	67,119	470,432	57,961	890,907	77.40	260,750	209,668	135,541	21,696
Grand Trunk Western	Aug.	347	1,418,664	259,032	1,804,834	212,792	336,761	50,282	543,928	50,999	1,202,918	66.60	601,916	544,104	300,073	307,955
	8 mos.	347	11,046,845	1,565,402	13,415,286	1,189,521	2,588,117	271,191	4,877,583	398,553	9,386,462	70.00	4,028,824	3,557,542	1,462,409	333,675
Atlantic & St. Lawrence	Aug.	166	155,951	44,140	220,437	129,470	50,579	2,845	100,572	13,208	299,144	135.70	—78,707	—93,857	—148,014	—91,700
	8 mos.	166	1,757,852	254,204	2,131,620	575,436	461,989	40,058	1,405,883	69,593	2,562,248	120.20	—430,628	—551,881	—1,310,076	—680,225
Chic., Det. & Canada Gr. Tr. Jct.	Aug.	59	251,121	7,926	296,587	22,114	15,070	5,929	84,047	3,560	130,721	44.10	165,866	154,590	128,454	46,391
	8 mos.	59	1,981,931	72,908	2,335,780	130,803	145,557	31,238	696,168	29,188	1,032,885	44.20	1,302,895	1,227,215	997,655	485,003
Det., Grand Haven & Milwaukee	Aug.	189	502,801	52,668	616,448	101,859	61,502	14,818	270,788	16,000	466,115	75.60	150,333	147,702	68,155	—16,540
	8 mos.	189	3,765,493	340,547	4,524,468	597,522	554,874	79,255	2,087,218	126,430	3,450,230	76.30	1,074,238	1,041,303	349,526	278,212
Great Northern	Aug.	8,254	8,450,460	1,487,629	11,011,237	1,440,091	1,635,023	155,956	3,710,475	221,149	7,181,574	65.20	3,829,663	3,100,224	3,005,800	1,798,619
	8 mos.	8,255	56,192,517	10,196,313	73,568,858	10,899,786	15,188,431	1,254,538	30,153,698	1,663,717	59,292,073	80.60	14,276,785	8,682,591	9,766,967	8,248,122
Green Bay & Western	Aug.	234	92,401	10,641	112,851	19,356	23,316	2,000	42,337	2,461	89,427	79.20	23,424	15,424	15,003	14,420
	8 mos.	234	685,719	114,723	867,477	149,960	185,330	19,576	355,318	22,026	731,889	84.30	135,588	71,212	92,348	121,655
Gulf Coast Lines	Aug.	922	883,135	234,616	1,177,440	173,710	145,344	29,581	256,570	36,244	641,238	54.50	536,202	482,958	465,707	299,578
	8 mos.	922	5,614,691	1,396,403	7,452,392	1,189,399	1,130,302	226,827	1,995,671	284,460	4,812,962	64.60	2,639,430	2,224,885	2,138,040	1,737,542
Gulf & Ship Island	Aug.	307	208,696	48,939	286,955	70,076	42,567	9,554	82,416	13,536	229,360	79.90	57,595	35,580	29,654	55,614
	8 mos.	307	1,636,899	323,616	2,184,507	400,315	316,348	65,997	648,490	106,624	1,618,815	74.10	565,692	375,690	308,875	374,088
Gulf, Mobile & Northern	Aug.	465	415,979	51,371	486,847	67,932	79,837	18,237	179,759	16,567	362,332	74.40	124,515	96,875	84,742	22,377
	8 mos.	465	3,402,760	335,877	3,890,001	572,172	654,041	135,731	1,399,062	136,348	2,895,044	74.40	994,957	783,092	649,735	530,494
Hocking Valley	Aug.	348	1,340,984	110,931	1,585,002	182,905	583,218	11,538	441,110	40,139	1,258,808	79.40	326,194	225,398	194,012	51,825
	8 mos.	348	10,324,941	750,348	11,898,445	1,103,873	4,048,114	105,561	3,532,994	293,902	9,079,464	76.30	2,818,981	2,126,907	2,149,567	1,707,072
Illinois Central	Aug.	4,839	10,369,042	2,437,938	13,613,355	2,335,555	3,498,850	190,003	4,892,803	317,376	11,271,669	82.80	2,341,686	1,620,365	1,579,078	2,123,407
	8 mos.	4,839	86,324,999	17,726,965	111,872,860	15,969,969	26,966,210	1,527,615	42,125,267	2,519,356	89,354,993	79.90	22,517,867	16,225,734	15,660,134	15,143,078
Yazoo & Mississippi Valley	Aug.	1,380	1,181,737	380,616	1,655,939	386,091	384,708	23,361	643,497	44,734	1,479,380	89.30	176,559	70,341	52,846	22,977
	8 mos.	1,380	9,736,183	2,721,136	13,195,700	3,106,524	2,971,160	185,777	5,216,455	350,452	11,775,041	89.20	1,420,659	541,533	431,735	151,574
Illinois Central & Yazoo & Miss. Val. Combined report	Aug.	6,219	11,550,779	2,818,554	15,269,294	2,721,646	3,883,558	213,364	5,536,300	362,110	12,751,049	83.50	2,518,245	1,690,706	1,631,924	2,146,384
	8 mos.	6,219	96,061,182	20,448,101	125,068,560	19,076,493	29,937,370	1,713,392	47,341,722	2,869,808	101,130,034	80.90	23,938,526	16,767,267	16,091,869	15,294,652
International & Great Northern	Aug.	1,159	958,258	247,981	1,301,713	240,501	214,263	32,214	451,142	46,177	988,728	75.96	312,985	280,446	240,753	133,524
	8 mos.	1,159	6,808,877	1,638,348	9,278,918	1,787,998	1,742,941	237,216	3,669,112	376,871	7,846,384	84.56	1,432,534	1,171,864	902,991	743,265
Kansas City, Mexico & Orient	Aug.	272	208,000	11,628	226,620	32,660	31,215	5,625	88,274	5,515	163,289	72.10	63,331	63,284	50,001	3,932
	8 mos.	272	1,082,768	67,194	1,225,848	250,933	252,028	43,920	581,998	43,419	1,172,298	95.60	53,550	4,746	5,999	—145,720
Kans. City, Mex. & Orient of Tex.	Aug.	465	139,348	10,863	156,199	21,189	38,745	5,691	68,766	5,823	140,214	89.80	15,985	15,985	—2,448	—14,836
	8 mos.	465	996,845	81,172	1,131,031	212,710	287,277	45,764	582,378	45,244	1,172,979	103.70	—41,948	—79,449	—200,271	—323,324
Kansas City Southern	Aug.	767	1,431,235	227,829	1,791,900	278,636	338,022	41,558	552,312	84,061	1,294,342	72.20	497,558	408,923	355,991	197,079
	8 mos.	767	10,521,530	1,471,864	13,138,253	1,835,267	2,723,403	312,053	4,543,074	572,247	9,984,089	76.00	3,154,164	2,450,807	2,157,258	1,871,876
Texarkana & Ft. Smith	Aug.	95	210,682	15,407	244,568	21,658	21,572	4,880	60,580	8,681	117,370	48.00	127,198	115,545	86,226	86,427
	8 mos.	95	1,499,799	123,263	1,780,504	151,115	181,621	40,528	472,485	68,943	913,783	51.30	866,721	774,548	568,497	301,792
Kansas, Oklahoma & Gulf	Aug.	314	166,831	11,938	184,783	40,339	29,220	6,907	71,087	10,993	158,637	85.90	26,146	16,225	10,509	66,008
	8 mos.	314	1,533,889	90,524	1,681,861	309,293	284,500	54,966	663,122	91,182	1,403,923	83.50	277,938	198,335	93,058	318,861
Lake Superior & Ishpeming	Aug.	33	160,176	29	191,282	25,667	14,192	221	31,179	3,296	74,555	39.00	116,727	109,435	110,382	174,863
	8 mos.	33	730,417	566	875,157	165,889	116,269	2,065	196,302	23,801	504,326	57.60	370,831	310,839	317,930	280,430
Lake Terminal R. R.	Aug.	13	.....	.....	108,554	22,914	25,338	.....	60,265	1,620	110,137	101.50	—1,583	—7,518	—6,371	8,148
	8 mos.	13	.....	.....	783,557	128,493	133,509	.....	452,309	14,246	728,557	93.00	55,000	4,343	32,505	225,080

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
Lehigh & Hudson River	Aug.	96	268,034	4,875	283,551	24,640	57,722	1,547	99,662	8,344	191,915	67.70	91,636	76,536	52,524	—43,732
	8 mos.	96	1,898,360	27,708	2,025,984	190,456	330,308	12,848	743,907	68,444	1,345,963	66.40	680,021	580,319	486,818	22,313
Lehigh & New England	Aug.	219	525,835	1,677	537,912	96,408	107,811	4,842	160,143	16,261	385,443	71.70	152,469	130,374	136,300	—11,608
	8 mos.	219	4,038,687	15,651	4,120,410	470,999	1,024,947	58,111	1,244,659	134,541	2,932,519	71.20	1,187,891	1,009,311	1,084,431	111,280
Lehigh Valley	Aug.	1,335	5,748,611	787,052	6,952,493	784,544	2,237,323	105,541	2,639,049	121,620	5,913,241	85.10	1,039,252	825,757	874,925	—821,008
	8 mos.	1,335	41,521,323	4,873,356	50,058,218	5,051,775	17,320,360	778,044	21,466,183	1,006,431	45,816,449	91.50	4,241,769	2,560,499	2,355,305	1,036,808
Los Angeles & Salt Lake	Aug.	1,209	1,228,484	660,038	2,071,753	325,135	482,604	47,623	645,333	56,486	1,615,619	78.00	456,134	343,283	252,987	83,772
	8 mos.	1,181	10,026,268	4,279,643	15,595,611	2,517,371	3,696,482	405,978	4,997,721	415,726	12,398,099	79.50	3,197,512	2,291,896	1,858,050	792,096
Louisiana & Arkansas	Aug.	302	270,721	37,190	314,839	98,802	45,963	9,450	89,988	8,194	249,917	79.40	64,922	44,427	39,252	87,995
	8 mos.	302	2,179,333	267,282	2,510,942	445,252	349,209	64,633	773,355	68,566	1,693,903	67.50	817,039	615,073	565,966	490,330
Louisiana Ry. & Nav. Co.	Aug.	343	241,984	32,988	292,451	59,470	60,077	9,682	122,878	11,217	263,299	90.00	29,152	11,632	—2,214	42,155
	8 mos.	343	2,174,196	246,036	2,554,511	509,997	506,940	84,293	1,039,881	89,064	2,229,309	87.30	325,202	185,838	24,551	—23,366
Louisiana Ry. & Nav. Co. of Tex.	Aug.	206	89,187	20,594	115,744	17,446	18,798	2,980	45,374	5,672	89,663	77.00	26,081	22,081	10,474	.....
	8 mos.	206	360,848	69,538	455,850	84,713	69,438	14,928	234,567	23,430	426,467	93.60	29,383	9,383	—48,621	.....
Louisville & Nashville	Aug.	5,049	8,693,165	2,540,059	11,973,819	1,672,377	3,193,825	196,035	4,297,742	252,519	9,656,566	80.60	2,317,253	1,865,853	1,887,807	531,517
	8 mos.	5,043	67,104,420	17,192,199	89,911,564	11,664,759	22,762,078	1,813,355	33,758,651	1,927,237	72,272,411	80.40	17,639,153	13,906,790	14,304,737	11,683,426
Louisville, Henderson & St. Louis	Aug.	199	224,553	73,259	319,754	79,110	33,748	6,866	76,517	8,884	205,125	64.20	114,629	99,821	90,759	65,054
	8 mos.	199	1,645,255	508,632	2,305,296	495,177	298,360	52,481	733,902	72,328	1,652,248	71.70	653,048	553,857	451,000	364,317
Maine Central	Aug.	1,201	1,210,851	546,116	1,905,595	295,252	382,631	12,139	764,224	45,608	1,508,973	79.20	396,622	296,001	285,782	278,467
	8 mos.	1,201	9,807,110	3,260,853	14,180,758	2,317,237	2,627,195	110,048	6,661,495	378,116	12,122,640	85.50	2,058,118	1,267,812	1,060,496	1,587,763
Midland Valley	Aug.	365	292,533	66,012	372,818	95,001	51,865	5,326	115,307	17,805	282,504	75.80	90,314	74,985	64,445	69,043
	8 mos.	365	2,328,915	502,611	2,971,619	544,623	405,180	42,150	919,963	143,108	2,021,864	68.00	949,755	826,545	748,292	949,081
Minneapolis & St. Louis	Aug.	1,649	1,228,832	131,482	1,431,103	224,520	288,087	24,217	569,545	40,954	1,147,624	80.20	283,479	218,292	149,404	153,675
	8 mos.	1,649	9,047,506	1,141,427	10,760,555	1,423,352	2,581,675	204,278	4,828,258	349,479	9,384,891	87.20	1,375,664	868,706	611,415	618,151
Minneapolis, St. Paul & S. S. Marie	Aug.	4,402	3,137,095	811,121	4,347,861	637,797	848,040	57,652	1,648,400	101,164	3,325,949	76.50	1,021,912	757,586	676,619	1,294,396
	8 mos.	4,593	24,478,699	5,198,792	32,357,528	4,254,881	5,875,014	465,855	13,886,638	862,483	25,490,366	78.80	6,867,162	4,773,522	4,651,553	3,332,081
Mississippi Central	Aug.	257	117,640	22,561	145,936	36,915	23,758	5,666	48,263	7,850	122,452	83.90	23,484	17,970	18,634	3,295
	8 mos.	257	1,023,347	131,925	1,196,988	251,895	204,151	45,167	406,721	58,305	966,168	80.70	230,820	188,216	170,272	76,726
Missouri & North Arkansas	Aug.	364	100,213	30,800	141,366	20,653	18,520	3,740	50,339	6,395	105,562	74.70	35,804	32,736	26,724	7,940
	8 mos.	364	723,556	176,684	960,616	174,583	139,082	26,095	417,577	53,530	806,782	84.00	153,834	133,466	66,540	—16,312
Missouri-Kansas-Texas	Aug.	1,813	2,430,599	523,465	3,198,371	459,793	769,752	56,367	866,216	87,303	2,208,294	69.00	990,077	799,656	845,043	678,959
	8 mos.	1,917	17,055,140	3,941,263	22,965,362	2,418,206	6,583,346	416,251	6,882,996	849,451	17,160,255	74.70	5,805,107	4,476,173	5,460,377	5,843,583
Missouri-Kansas-Texas of Texas	Aug.	1,389	1,179,187	458,284	1,780,069	287,990	357,043	41,520	658,023	64,759	1,412,847	79.40	367,222	320,531	141,893	—144,667
	8 mos.	1,520	8,185,029	3,302,098	12,708,035	1,770,626	2,704,368	323,665	5,311,163	603,975	10,715,617	84.30	1,992,418	1,587,027	69,082	1,050,551
Missouri Pacific	Aug.	7,171	7,673,312	1,777,676	10,255,028	1,638,192	2,867,648	192,492	3,772,818	284,072	8,827,269	86.00	1,427,759	1,044,773	793,253	741,059
	8 mos.	7,171	54,686,514	12,415,416	73,439,762	10,475,791	19,858,051	1,288,988	29,320,858	2,179,609	63,496,885	86.50	9,942,877	6,921,429	4,880,874	5,264,945
Mobile & Ohio	Aug.	1,165	1,337,298	198,505	1,624,807	264,616	362,767	49,703	601,404	46,750	1,322,612	81.40	302,195	229,754	175,716	150,275
	8 mos.	1,165	11,490,001	1,309,850	13,537,683	1,721,926	3,010,224	370,565	4,961,511	371,134	10,433,006	77.10	3,104,677	2,413,419	2,049,175	1,607,294
Monongahela	Aug.	106	483,267	35,340	531,442	72,443	115,904	1,018	147,361	9,409	346,135	65.10	185,307	175,357	82,339	20,347
	8 mos.	106	3,525,048	302,632	3,880,107	455,808	823,799	8,848	1,184,668	73,870	2,546,993	65.60	1,333,114	1,253,407	623,380	434,699
Monongahela Connecting	Aug.	7	.....	.....	253,832	27,699	45,195	562	121,286	5,206	199,948	78.80	53,884	51,296	39,533	—34,091
	8 mos.	7	.....	.....	1,843,359	209,852	308,120	4,544	937,547	39,850	1,499,913	81.40	343,446	324,226	159,449	158,907
Montour	Aug.	57	242,138	419	245,148	43,039	75,721	937	44,616	6,980	171,394	69.90	73,754	60,246	85,478	—33,619
	8 mos.	57	1,650,921	3,876	1,675,128	265,678	432,185	8,609	323,179	56,838	1,086,592	64.90	588,536	480,988	698,160	—77,570
Nashville, Chattanooga & St. Louis	Aug.	1,258	1,527,108	486,046	2,150,926	486,285	477,486	68,258	770,811	59,503	1,863,211	86.60	287,715	227,608	265,282	353,835
	8 mos.	1,258	11,948,138	3,329,114	16,371,125	2,698,244	3,798,685	580,986	6,316,664	489,666	13,917,261	85.00	2,453,864	1,970,122	2,271,538	1,706,493
Nevada Northern	Aug.	165	72,451	10,323	89,005	12,089	5,688	478	14,555	3,646	36,456	40.90	52,549	45,943	46,466	25,856
	8 mos.	165	506,777	73,258	621,523	94,099	43,553	4,398	114,172	28,011	284,233	45.70	337,290	284,466	293,234	83,902
Newburgh & South Shore	Aug.	7	.....	.....	177,322	20,346	52,438	.....	65,540	4,094	144,029	81.20	33,293	20,016	25,781	6,794
	8 mos.	7	.....	.....	1,413,352	139,909	415,380	.....	593,140	33,774	1,188,553	84.10	224,700	121,971	70,738	252,160
New Orleans Great Northern	Aug.	274	203,982	42,601	255,863	39,605	47,046	5,637	76,300	10,546	179,580	70.20	76,283	59,255	59,651	62,114
	8 mos.	274	1,563,618	274,625	1,908,309	253,392	314,303	45,754	576,988	85,098	1,279,264	67.00	629,045	494,257	493,795	364,020
New York Central	Aug.	6,899	23,080,336	9,752,074	36,872,841	5,141,454	9,199,620	367,244	11,637,161	846,133	27,567,561	74.80	9,305,280	7,260,853	7,137,420	1,958,307
	8 mos.	6,898	188,468,896	65,560,319	286,154,291	31,300,274	68,936,403	2,591,005	100,799,398	6,677,210	213,351,869	74.50	72,822,422	56,180,705	54,485,596	31,460,053
Cincinnati Northern	Aug.	244	424,818	18,745	450,473	65,321	90,035	4,829	134,870	7,292	302,344	67.10	148,129	121,828	90,015	—50,684
	8 mos.	244	3,366,017	114,851	3,537,739	552,922	588,982	37,289	1,172,134	59,516	2,409,896	68.10	1,127,843	947,518	623,497	160,450
Cleve., Cincinnati, Chic. & St. L.	Aug.	2,407	6,112,920	1,750,349	8,484,030	1,004,350	1,809,563	112,805	2,673,456	200,607	5,859,297	69.10	2,624,733	2,106,218	2,095,711	828,032
	8 mos.	2,407	47,106,856	11,875,626	64,051,930	7,043,557	14,248,160	858,088	23,010,532	1,480,183	47,040,458	73.40	17,011,472	13,438,288	12,960,915	10,036,494
Indiana Harbor Belt	Aug.	119	.....	.....	986,947	126,774	140,806	4,132	400,660	22,019	694,391	70.40	292,556	245,521	116,664	149,083
	8 mos.	119	.....	.....	7,718,008	840,892	1,048,588	35,103	3,397,772	171,252	5,493,607	71.20	2,224,401	1,974,856	1,024,117	1,335,235
Michigan Central	Aug.	1,862	5,090,864	2,302,800	8,154,041	1,113,856	1,655,570	99,630	2,532,846	145,549	5,615,125	68.90	2,538,916	2,010,752	1,897,249	1,737,525
	8 mos.	1,862	43,766,071	14,321,225	64,194,497	7,036,699	12,241,024	778,591	21,299,540	1,166,862	43,109,940	67.20	21,084,557	17,120,006	15,341,639	10,856,086
Pittsburgh & Lake Erie	Aug.	234	3,665,586	318,742	4,092,348	557,051	960,870	28,126	1,062,137	66,988	2,677,760	65.40	1,414,588	1,166,518	1,521,521	215,919
	8 mos.	231	28,088,041	2,190,715	30,972,649	3,195,813	7,667,336	169,055	8,567,759	508,144	20,122,778	65.00	10,849,871	8,889,047	11,799,157	525,751
New York, Chicago & St. Louis	Aug.	1,696	4,498,482	274,773	4,951,671	671,969	1,109,554	108,042	1,611,644	153,503	3,662,069	74.00	1,289,602	1,020,108	1,007,992	829,455
	8 mos.	1,696	35,451,788	1,586,203	38,581,612	4,384,531	7,679,513	853,649	13,739,628	1,202,298	27,916,957	72.40	10,664,655	8,550,674	7,571,118	6,542,051
New York, New Haven & Hartford	Aug.	2,000	5,862,670	4,738,656	11,740,570	1,768,477	2,846,232	59,545	4,078,157	285,211	9,216,213	78.50	2,524,357	2,092,347	1,641,136	625,312
	8 mos.	2,000	45,740,858	33,253,062	89,325,380	10,448,046	21,423,993	465,932	36,358,861	2,259,465	72,330,856	81.00	16,994,524	13,603,071	7,265,312	8,615,189

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures.	Maintenance of Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
Central New England	Aug.	295	718,172	18,157	759,872	120,765	150,321	4,720	229,581	11,018	514,539	67.70	245,333	221,261	196,180	—27,474
	8 mos.	295	4,820,029	132,261	5,161,138	843,870	1,073,639	36,779	1,922,549	85,393	3,959,457	76.70	1,201,681	1,011,073	543,169	563,438
New York, Ontario & Western	Aug.	569	776,950	736,063	1,715,812	241,870	300,000	15,573	557,609	31,407	1,147,584	66.90	568,228	524,872	501,162	209,785
	8 mos.	569	5,932,324	2,418,157	9,790,337	1,311,258	2,100,000	121,126	4,472,219	259,493	8,271,520	85.50	1,518,817	1,177,020	894,105	721,429
Norfolk & Western	Aug.	2,238	7,412,731	1,014,288	8,758,915	1,198,990	2,414,241	78,419	2,752,681	150,715	6,605,384	75.40	2,153,531	1,603,072	1,798,904	1,614,600
	8 mos.	2,237	52,954,785	6,706,959	62,229,997	8,279,759	16,487,383	630,748	21,314,343	1,229,146	48,087,873	77.30	14,142,124	10,086,549	12,563,738	17,315,767
Norfolk Southern	Aug.	931	492,899	153,715	698,068	102,384	88,011	24,189	292,949	28,975	537,532	77.00	160,536	122,579	102,150	69,660
	8 mos.	931	4,721,655	963,321	6,043,252	811,741	917,796	186,858	2,515,549	231,309	4,668,355	77.20	1,374,897	1,068,006	776,750	635,778
Northern Pacific	Aug.	6,668	6,418,341	1,449,853	8,661,337	1,340,017	1,925,587	138,659	3,247,969	228,061	6,904,626	79.70	1,756,711	1,039,853	1,205,236	1,685,101
	8 mos.	6,668	46,991,019	10,566,164	63,406,979	9,908,087	16,034,637	1,361,883	25,727,419	1,731,313	55,391,201	87.40	8,015,778	2,379,231	5,736,198	6,277,654
Northwestern Pacific	Aug.	496	537,992	273,430	883,868	97,643	131,027	8,364	266,560	17,508	520,705	58.90	363,163	316,589	300,341	271,821
	8 mos.	496	3,052,503	1,796,482	5,344,431	869,975	859,482	96,420	1,891,035	146,501	3,834,712	71.80	1,509,719	1,121,636	1,022,166	1,042,413
Pennsylvania R. R.	Aug.	10,478	44,600,377	15,101,284	64,833,927	8,844,738	16,375,545	640,602	23,965,301	1,461,949	52,101,333	80.40	12,732,594	8,964,125	7,774,400	5,631,524
	8 mos.	10,478	339,311,699	103,192,183	484,735,655	56,119,290	127,019,775	5,047,565	190,675,698	11,518,091	396,871,083	81.90	87,864,572	66,481,698	56,612,012	50,576,377
Baltimore, Chesapeake & Atlantic	Aug.	87	104,642	83,625	192,702	16,270	18,578	1,508	91,912	3,644	131,912	68.50	60,790	44,520	48,559	30,230
	8 mos.	87	683,953	310,497	1,033,180	119,339	329,391	14,364	644,664	31,148	1,138,906	110.20	—105,726	—145,880	—141,411	—15,390
Long Island	Aug.	397	963,031	2,479,029	3,735,347	383,549	434,215	26,070	1,261,877	63,569	2,183,690	58.50	1,551,657	1,267,163	918,750	823,792
	8 mos.	397	6,978,909	14,076,529	22,984,147	2,618,514	3,793,812	166,253	9,743,374	510,875	16,956,439	73.80	6,027,708	4,836,223	3,060,582	3,871,727
Maryland, Delaware & Virginia	Aug.	52	64,614	64,411	132,044	10,102	18,187	1,164	78,694	2,164	110,311	83.50	21,733	13,824	8,291	23,551
	8 mos.	52	481,613	223,837	732,096	64,925	217,512	10,907	513,184	18,803	825,331	112.70	—93,235	—111,596	—125,980	—79,993
West Jersey & Seashore	Aug.	359	436,954	1,417,743	1,963,311	251,414	281,191	27,669	639,022	32,873	1,247,545	63.50	715,766	406,654	373,278	319,511
	8 mos.	359	3,410,452	5,710,939	9,853,388	1,629,103	1,748,928	124,161	4,228,926	213,158	8,043,945	81.60	1,809,440	1,058,178	876,197	857,254
Peoria & Pekin Union	Aug.	19	27,301	2,194	145,958	44,950	17,759	408	60,623	8,451	132,191	90.60	13,767	3,767	39,341	50,908
	8 mos.	19	174,519	21,895	1,152,643	214,842	124,033	3,784	499,093	72,885	914,637	79.40	238,006	143,006	348,097	346,824
Pere Marquette	Aug.	2,262	2,935,487	647,750	3,976,042	680,224	834,830	52,397	1,434,209	100,258	3,092,212	77.80	883,830	715,613	529,900	666,921
	8 mos.	2,226	23,479,248	3,686,286	29,986,598	3,619,156	6,499,721	398,013	11,464,277	852,155	22,847,656	76.20	7,138,942	5,983,770	4,423,767	3,821,168
Philadelphia & Reading	Aug.	1,125	7,889,723	914,479	9,234,598	920,979	1,995,692	69,297	3,147,340	147,694	6,259,352	67.80	2,975,246	2,504,729	2,364,861	7,059
	8 mos.	1,125	62,322,209	6,981,814	72,976,875	5,941,910	14,996,873	524,070	25,892,782	1,197,165	48,765,754	66.80	24,211,121	21,885,652	20,257,911	5,397,335
Atlantic City	Aug.	170	157,049	682,189	859,510	71,915	56,153	10,005	286,337	4,151	428,626	49.90	430,884	410,894	349,365	170,401
	8 mos.	170	1,021,519	2,346,321	3,490,244	492,946	336,071	50,507	1,788,329	39,397	2,706,943	77.60	783,301	623,043	325,172	204,400
Perkiomen	Aug.	41	94,665	10,066	106,898	10,320	4,580	106	42,460	772	58,270	54.50	48,628	53,135	46,938	52,791
	8 mos.	41	662,072	60,003	749,798	62,952	33,360	862	345,228	6,670	449,329	59.90	300,469	260,556	220,090	290,505
Port Reading	Aug.	21	165,578	.....	206,939	20,767	22,049	229	72,363	1,225	116,632	56.40	90,307	47,156	9,566	—44,361
	8 mos.	21	1,482,051	.....	1,919,235	150,279	109,713	1,832	697,659	17,817	977,294	50.90	941,941	802,688	320,726	—52,130
Pittsburgh & Shawmut	Aug.	102	113,289	3,157	120,560	23,919	45,467	1,748	40,404	12,833	124,371	103.20	—3,811	—3,942	33,135	45,956
	8 mos.	102	871,140	38,418	932,937	174,197	378,572	12,790	339,187	57,572	962,318	102.10	—29,381	—38,042	259,174	—12,437
Pittsburgh, Shawmut & Northern	Aug.	210	107,023	5,799	116,658	41,892	41,044	1,930	48,667	6,017	139,550	119.60	—22,892	—25,239	—10,678	—19,461
	8 mos.	210	905,952	52,689	984,487	248,624	326,848	14,084	422,339	51,814	1,063,709	108.00	—79,222	—98,515	47,596	—236,688
Quincy, Omaha & Kansas City	Aug.	250	66,317	24,735	101,199	38,937	19,244	994	40,119	1,945	101,053	99.90	146	—3,858	—6,432	—8,501
	8 mos.	250	597,401	175,102	841,549	308,470	179,526	6,800	431,407	18,621	942,932	112.00	—101,383	—136,653	—184,522	—94,683
Richm'd, Fredericksburg & Potomac	Aug.	117	447,750	341,906	908,405	73,808	161,037	8,721	297,447	31,458	586,407	64.60	321,998	266,862	230,619	194,920
	8 mos.	117	4,176,882	2,844,762	8,312,628	745,868	1,174,857	68,768	2,911,619	238,046	5,302,846	63.80	3,009,782	2,535,739	2,052,544	1,657,970
Rutland	Aug.	413	332,909	170,675	628,989	119,018	110,233	8,990	231,510	12,701	484,477	77.00	144,512	116,015	117,043	61,089
	8 mos.	413	2,641,784	1,012,565	4,526,850	800,657	833,977	68,613	1,969,496	100,939	3,786,628	83.60	740,222	544,076	609,368	270,458
St. Louis-San Francisco	Aug.	4,751	5,371,118	1,858,741	7,702,610	1,226,527	1,624,276	96,725	2,545,825	195,477	5,653,566	73.40	2,049,044	1,723,664	1,671,449	874,824
	8 mos.	4,751	39,414,593	13,058,145	56,624,573	7,115,875	11,528,873	744,916	20,650,523	1,542,370	41,262,345	72.90	15,362,228	12,732,847	12,313,702	10,700,898
Ft. Worth & Rio Grande	Aug.	235	109,264	27,947	145,986	34,993	24,387	3,621	54,166	5,523	122,308	83.80	23,678	19,841	10,530	—7,121
	8 mos.	235	675,026	210,979	961,891	230,218	199,529	25,213	462,494	47,067	955,538	99.30	6,353	—25,228	—93,981	—227,961
St. Louis, San Francisco & Texas	Aug.	134	142,208	14,006	160,222	37,422	25,453	4,357	52,710	6,325	126,255	78.80	33,967	31,193	11,692	23,842
	8 mos.	134	896,280	110,069	1,050,721	237,707	182,007	30,831	434,995	60,786	945,629	90.00	105,092	87,292	—78,071	—59,976
St. Louis Southwestern	Aug.	968	1,358,951	187,150	1,622,626	176,449	283,267	42,509	395,950	52,580	962,800	59.30	659,826	544,026	524,355	498,963
	8 mos.	968	11,675,935	1,281,088	13,629,308	1,522,860	2,557,192	347,011	3,515,029	418,931	8,435,786	61.90	5,193,522	4,439,781	4,046,808	3,367,590
St. Louis Southwestern of Texas	Aug.	807	575,429	129,074	746,926	138,563	228,918	21,231	274,134	33,085	699,768	93.70	47,158	19,652	21,997	—44,232
	8 mos.	807	3,987,700	827,302	5,183,826	1,105,167	2,916,411	163,166	2,558,979	250,292	6,005,292	115.80	—821,466	—1,038,889	—895,816	—930,838
San Antonio & Aransas Pass	Aug.	739	603,157	103,768	738,751	85,617	144,145	11,285	219,723	21,935	480,921	65.10	257,830	242,717	221,693	111,809
	8 mos.	739	2,844,308	559,336	3,667,952	772,037	1,024,292	86,914	1,489,310	185,334	3,546,716	96.70	121,236	—3,072	35,932	—180,284
San Antonio, Uvalde & Gulf	Aug.	317	93,040	23,388	123,756	14,519	13,492	3,704	39,598	6,042	77,111	62.30	46,645	43,524	34,690	17,174
	8 mos.	317	607,675	144,833	822,581	121,349	110,895	30,133	324,417	75,959	662,221	80.50	160,360	133,761	61,660	46,503
Seaboard Air Line	Aug.	3,577	2,546,495	807,484	3,719,557	453,317	637,643	103,773	1,506,946	170,223	2,897,641	77.90	821,916	646,972	652,020	46,687
	8 mos.	3,576	24,050,412	6,830,761	34,320,900	4,281,479	5,458,150	1,083,091	13,798,123	1,340,996	26,756,840	78.00	7,564,060	6,158,527	4,786,243	2,403,682
Southern Ry.	Aug.	6,971	8,649,705	3,232,251	12,754,333	1,886,157	2,719,658	260,905	4,429,918	334,133	9,714,280	76.20	3,040,053	2,377,739	2,224,583	1,154,253
	8 mos.	6,971	70,022,040	22,239,660	99,417,379	13,820,073	19,194,470	1,856,134	36,894,018	2,548,737	75,007,347	75.50	24,410,032	19,836,740	17,691,059	11,232,869
Alabama Great Southern	Aug.	318	652,132	227,459	930,564	112,314	198,068	19,910	294,950	24,848	657,166	70.60	273,398	229,940	247,772	—182,666
	8 mos.	318	5,399,731	1,414,202	7,209,962	848,216	1,372,133	162,189	2,376,065	193,408	4,999,207	69.30	2,210,755	1,794,002	1,790,279	701,376
Cin., New Orleans & Tex. Pacific	Aug.	338	1,363,063	428,193	1,877,395	318,799	462,001	35,342	557,769	46,006	1,429,672	76.20	447,723	385,864	365,902	—569,587
	8 mos.	338	11,963,596	2,955,363	15,609,683	2,024,790	3,484,357	279,183	4,852,793	367,698	11,095,842	71.10	4,513,841	3,750,811	3,272,111	965,550
Georgia, Southern & Florida	Aug.	402	286,948	114,653	443,473	80,477	77,486	10,413	166,703	11,850	348,927	78.70	94,546	74,977	39,084	15,402
	8 mos.	402	2,305,237	906,775	3,494,962	566,659	579,242	72,567	1,415,232	91,396	2,747,349	78.60	747,613	588,737	338,330	214,241

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF AUGUST AND EIGHT MONTHS OF CALENDAR YEAR 1923—CONTINUED

Name of road.		Average mileage operated during period.	Operating revenues: Freight.	Passenger.	Total (inc. misc.)	Operating expenses: Maintenance of—Way and structures.	Maintenance of—Equipment.	Traffic.	Transportation.	General.	Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net after rentals.	Net after rentals 1922.
New Orleans & Northeastern	Aug.	207	416,727	100,156	577,945	85,436	126,118	10,529	202,428	15,862	445,141	77.00	132,804	82,623	84,023	—221,423
	8 mos.	207	3,451,907	697,720	4,627,112	644,620	916,615	86,088	1,684,087	122,931	3,484,712	75.30	1,142,400	733,131	669,575	—110,130
Northern Alabama	Aug.	110	141,144	15,175	159,504	26,534	8,623	2,543	60,707	3,063	101,470	63.60	58,034	52,010	23,666	—8,234
	8 mos.	110	1,007,996	106,185	1,137,663	178,861	53,676	17,029	403,943	26,658	680,167	59.80	457,496	403,436	212,183	76,249
Southern Pacific	Aug.	7,132	12,302,111	4,487,257	18,643,069	2,421,846	3,071,965	258,906	5,748,028	445,730	12,230,755	65.60	6,412,314	5,043,710	4,529,932	3,782,153
	8 mos.	7,121	86,621,972	30,874,057	130,302,916	17,858,762	22,938,647	2,185,639	42,157,120	3,684,018	91,019,738	69.90	39,283,178	28,986,532	27,118,013	20,973,103
Arizona Eastern	Aug.	382	262,976	25,779	302,344	39,333	43,733	3,250	77,511	20,028	185,249	61.27	117,095	92,753	86,372	48,008
	8 mos.	382	2,089,832	231,649	2,445,577	321,013	380,070	24,637	612,857	149,153	1,497,085	61.22	948,492	753,666	691,311	482,025
Atlantic Steamship Lines	Aug.	...	1,029,487	68,342	1,150,861	18,443	173,343	21,271	682,221	25,774	921,052	80.00	229,809	221,540	221,540	83,015
	8 mos.	...	8,148,842	501,371	9,054,824	120,338	1,353,224	171,789	5,435,523	220,147	7,301,021	80.60	1,753,803	1,658,638	1,658,248	1,168,127
Galveston, Harrisb. & San Antonio	Aug.	1,379	1,523,597	436,678	2,090,286	375,668	392,972	38,934	727,951	68,124	1,615,024	77.30	475,262	411,335	350,595	330,862
	8 mos.	1,379	10,617,148	3,329,234	14,840,927	3,069,495	3,112,063	340,378	5,854,403	563,398	12,944,545	87.20	1,896,382	1,390,234	1,096,548	1,376,507
Houston & Texas Central	Aug.	923	918,297	287,030	1,272,535	245,365	241,940	24,866	410,000	45,054	966,202	75.90	306,333	265,033	229,927	227,305
	8 mos.	923	6,212,626	2,083,923	8,874,110	1,953,838	1,948,599	202,610	3,290,855	366,551	7,746,889	87.30	1,127,221	744,278	444,507	1,208,950
Houston, East & West Texas	Aug.	191	211,569	51,648	275,044	61,050	59,379	4,074	91,867	8,677	225,040	81.80	50,004	41,821	26,419	42,566
	8 mos.	191	1,477,215	358,674	1,939,537	459,467	462,567	29,191	741,697	70,142	1,759,721	90.70	179,816	107,798	13,671	132,453
Louisiana Western	Aug.	207	228,140	94,075	343,714	61,420	70,839	9,990	108,291	16,647	270,798	78.80	72,916	23,937	27,497	43,199
	8 mos.	207	2,068,643	724,523	2,990,941	503,952	577,217	78,726	891,947	134,776	2,217,331	74.10	773,610	541,954	552,061	423,701
Morgan's L. & T. R. R. & S. S. Co.	Aug.	400	487,202	159,070	687,239	171,042	158,134	15,527	288,233	30,292	662,284	96.40	24,955	—21,485	—53,111	—5,122
	8 mos.	400	4,033,287	1,249,583	5,718,199	1,318,287	1,256,250	130,622	2,296,753	247,666	5,263,294	92.00	454,905	84,206	—102,909	—261,395
Texas & New Orleans	Aug.	507	535,218	175,621	757,605	178,602	165,942	11,590	290,541	24,630	677,375	89.40	80,230	49,102	17,162	—8,537
	8 mos.	507	4,140,851	1,296,347	5,819,632	1,507,460	1,377,970	102,367	2,132,168	203,173	5,380,180	91.90	469,452	227,580	78,638	38,309
Spokane International	Aug.	165	81,788	21,385	108,796	23,029	13,042	3,209	36,463	6,132	82,525	75.90	26,271	20,237	14,315	25,467
	8 mos.	165	603,434	136,213	782,489	125,947	88,489	25,811	293,706	46,876	587,146	75.00	195,343	148,492	89,199	111,893
Spokane, Portland & Seattle	Aug.	554	501,265	139,103	708,676	107,263	117,409	11,146	218,065	17,800	480,595	67.80	228,081	153,048	128,769	129,014
	8 mos.	554	3,550,296	1,136,110	5,172,777	649,554	905,655	80,946	1,604,991	140,542	3,472,078	67.10	1,700,699	1,100,163	951,702	879,178
Tennessee Central	Aug.	287	192,353	55,455	262,177	57,892	45,904	6,463	95,045	9,896	215,162	82.10	47,015	38,970	24,540	—33,230
	8 mos.	287	1,589,887	361,118	2,058,602	338,854	349,442	48,057	780,054	78,094	1,593,908	77.40	464,694	414,921	269,712	43,865
Terminal Railroad Assoc. of St. L.	Aug.	37	.....	.....	446,667	97,714	26,659	1,159	156,736	10,417	296,320	66.30	150,347	81,730	182,683	156,403
	8 mos.	37	.....	.....	3,369,293	717,794	290,500	8,029	1,129,334	63,643	2,237,656	66.40	1,131,637	626,512	1,537,465	1,502,707
East St. Louis Connecting	Aug.	1	.....	.....	224,050	14,040	2,140	332	67,863	2,136	86,511	38.60	137,539	127,849	105,328	80,954
	8 mos.	1	.....	.....	1,582,364	100,387	42,365	2,294	511,055	21,112	677,213	42.80	905,151	800.242	638,828	551,649
St. L. Merchants' Bridge Term.	Aug.	9	.....	.....	418,597	77,661	14,934	1,074	182,571	6,436	282,676	67.50	135,921	109,755	109,006	110,470
	8 mos.	9	.....	.....	3,258,429	384,146	209,575	7,390	1,506,640	55,038	2,162,789	66.40	1,095,640	853,889	812,623	661,327
St. Louis Transfer Ry.	Aug.	6	.....	.....	88,316	5,966	1,668	193	41,294	1,150	50,271	56.90	38,045	37,387	29,834	419
	8 mos.	6	.....	.....	574,686	41,790	28,835	1,334	299,880	11,025	382,864	66.60	191,822	188,453	137,816	23,657
Texas & Pacific Ry.	Aug.	1,952	1,914,668	633,730	2,745,867	395,036	528,668	54,029	889,607	82,770	1,969,247	71.70	776,620	675,357	646,695	471,163
	8 mos.	1,952	13,856,373	4,710,436	20,171,880	2,926,284	5,089,864	407,723	7,538,255	720,121	16,818,535	83.40	3,353,345	2,536,919	1,866,175	2,039,480
Toledo, Peoria & Western	Aug.	247	118,528	40,761	174.185	27,692	60,378	2,329	75,464	7,643	173,201	99.40	984	—11,097	—19,186	—11,816
	8 mos.	247	779,613	332,167	1,225,713	227,787	395,230	20,073	618,614	60,566	1,321,897	107.80	—96,184	—185,409	—171,424	—144,378
Toledo, St. Louis & Western	Aug.	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	8 mos.	Included in New York, Chicago & St. Louis.														
Trinity & Brazos Valley	Aug.	368	398,298	23,293	431,696	55,125	71,631	3,092	126,100	14,067	269,993	62.50	161,703	154,182	89,391	—8,986
	8 mos.	368	1,362,017	140,048	1,545,538	272,859	307,733	25,726	586,365	93,408	1,280,589	82.90	264,949	208,413	32,945	—157,563
Ulster & Delaware	Aug.	128	92,726	112,917	242,989	28,999	28,980	4,617	100,476	7,653	170,725	70.20	72,264	66,262	54,353	26,142
	8 mos.	128	605,657	363,560	1,266,153	160,014	191,156	24,577	590,037	63,856	1,030,583	81.40	235,570	187,538	136,300	56,241
Union R. R. of Penna.	Aug.	45	.....	.....	1,218,594	86,999	264,803	166	490,352	7,455	849,775	69.70	368,819	286,822	390,719	403,513
	8 mos.	45	.....	.....	8,457,777	527,919	1,827,706	1,390	3,850,876	61,884	6,269,719	74.10	2,188,058	1,753,938	2,490,103	2,628,025
Union Pacific	Aug.	3,708	8,090,923	1,868,978	10,896,004	1,766,218	2,241,823	137,066	2,835,431	289,823	7,515,188	69.00	3,380,816	2,788,097	2,269,337	2,662,815
	8 mos.	3,708	52,702,928	11,918,996	71,199,797	9,637,883	15,897,475	1,178.157	20,778,177	2,149,234	51,113,530	71.80	20,086.267	15,513,817	14,703,270	14,194,894
Oregon Short Line	Aug.	2,366	2,470,295	616,095	3,356,996	678,107	609,081	43,901	1,051,436	111,580	2,576,250	76.70	780,746	528,546	406,769	384,467
	8 mos.	2,366	18,084,079	3,729,655	23,621,248	4,192,420	4,824,389	359,567	7,634,852	859,918	18,362,678	77.70	5,258,570	3,241,148	2,794,589	2,834,898
Oregon Wash. R. R. & Nav. Co.	Aug.	2,238	1,951,336	555,101	2,733,852	563,977	437,877	62,879	1,000,624	118,071	2,215.652	81.00	518,200	339,281	197,474	—8,231
	8 mos.	2,237	12,871,710	3,777,781	18,300,044	3,831,635	3,466,065	505,296	7,958,228	931,599	16,877,767	92.20	1,422,277	53,003	—670,794	—1,267,925
St. Joseph & Grand Island	Aug.	258	224,775	27,453	276,425	64,395	50,874	2,390	108,185	12,261	238,105	86.10	38,320	25,184	1,271	10,777
	8 mos.	258	1,727,670	200,636	2,072,805	396,301	426,942	19,918	913,388	98,202	1,856.357	89.60	216,448	110,920	—19,216	41,313
Utah	Aug.	102	130,956	541	132,773	41,528	35,741	347	33,092	4,588	114,681	86.40	18,092	11,643	5,398	35,079
	8 mos.	102	978.062	4,650	990,118	194,785	292,042	2,847	272,798	41,318	802,210	81.00	187,908	134,636	82,626	197,032
Virginian	Aug.	540	1,573,743	96,662	1,787,426	170.177	511,534	12,055	464,787	32,291	1.189,251	66.50	598,175	490,385	517,825	294,718
	8 mos.	540	13,197,536	618,991	14.690.000	1,379,199	3,396,381	94,017	3,860,807	287,578	9.021,792	61.40	5.668.208	4,839,090	5,128.170	4,532,159
Wabash	Aug.	2,472	4,633,490	1,050,119	6,108,633	978,083	1.215,802	139,286	2,101.030	159,498	4 618,811	75.60	1,489,822	1,299,180	1,033,911	61,674
	8 mos.	2,472	33,582,038	6,386,672	43,319,019	6,050,053	9,149,267	993,239	16,384,683	1,231,227	33,988,635	78.50	9,330,384	7,803,686	5,811,964	3,024,979
Western Maryland	Aug.	804	1,849,313	111,859	2.035.126	268,713	567,971	39,123	650,938	44,803	1,585,624	77.90	449.502	359,502	398,252	256,949
	8 mos.	804	14.341,016	659,311	15.771,172	1,861.354	4,187,241	290,861	5,458,631	355,758	12,291,259	77.90	3,479,913	2,834,913	3.075,018	2,005,475
Western Pacific	Aug.	1,043	902,814	306,012	1,303.728	293,067	203,284	35,335	406,687	34,314	1,003,268	77.70	300,460	218,215	287,203	111,696
	8 mos.	1,043	6,172,510	1,601,649	8,480 423	1,472,987	1,585,037	279,472	2,982,309	274,249	6,772,584	79.90	1,707,839	1,077,636	1,501,830	568,734
Wheeling & Lake Erie	August	511	1,728,861	77,350	1,962,765	297,849	521,334	19,504	573,883	40,654	1,456,793	74.20	505,972	380,275	351,745	—251,507
	8 mos.	511	11,010,757	504,606	12,483,596	1,523,145	3,713,960	130,207	4,025,570	288,102	9,708,360	77.80	2,775,236	1,881,288	1,590,069	802,616

C. & N. W. to Celebrate Seventy-Fifth Anniversary

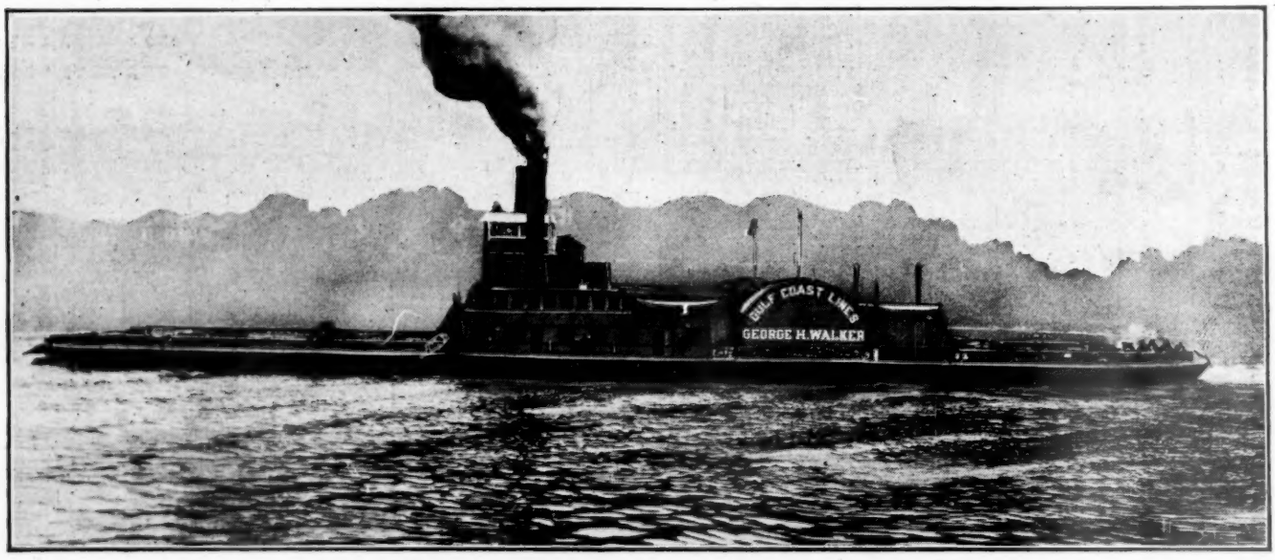
The seventy-fifth anniversary of the Chicago & North Western will be celebrated in Chicago on October 24, when the officers of the railway will have as their guests for the day 100 veterans who have been in active service for 50 years or more. These veterans representing all branches of the railway service will be brought to that city as guests. They will be tendered a luncheon in the passenger terminal by the Chicago & North Western Women's Club and taken on an automobile tour of the Park and boulevard system of Chicago, the day ending with a "get-together" and good fellowship dinner at one of the principal hotels. The Chicago & North Western is the pioneer road of the West, the old Galena & Chicago Union having been the first railroad to lay tracks west of Chicago.

Car Ferry "George H. Walker"

The Gulf Coast Lines will put in service at Baton Rouge, La., next week, a new transfer steamer to ferry its trains across the Mississippi river. It is named "George H. Walker," in honor of the chairman of the Board of Directors.

The new boat is of steel, 340 ft. long, 91 ft. 6 in. wide and has a moulded depth of 11 ft. It was built by the Dravo Contracting Company, Pittsburgh, Pa., and cost over $250,000. It has three tracks and can carry 12 passenger cars or 21 freight cars.

The trains of the Gulf Coast Lines use the Yazoo & Mississippi Valley from New Orleans to Baton Rouge, 93 miles northwest of New Orleans, and there are transferred across the river to Anchorage. The boat is propelled by independently operated side wheels, driven by two engines, each developing about 600 h. p. from boilers carrying 200 lb. steam pressure.



New Mississippi River Car Ferry of the Gulf Coast Lines

Illinois State Chamber of Commerce

The Illinois State Chamber of Commerce held its annual meeting in Chicago, October 16 and 17 and discussed transportation from various standpoints. Ralph B. Heilman, dean of the School of Commerce of Northwestern University, spoke on "Where is Government Regulation Leading Us?" Other speakers were James R. Howard, former president of the American Farm Bureau Federation, and C. H. Markham, president of the Illinois Central. At the banquet which followed the business meeting, A. B. Johnson, president of the Pennsylvania State Chamber of Commerce, spoke on "The Interrelationships of Business." He called attention to the fact that though a few of the highly developed railroads are earning dividends, and much publicity is being given to the fact, attention should be given to the poorly equipped roads, which are not making expenses but on which, nevertheless, the majority of the people depend for transportation. The cost of transportation can be reduced only by making extensive permanent improvements, and these can be financed only when investors feel sure of adequate returns. Business men should exert every effort to influence Congress to let the Transportation Act alone until time shall have demonstrated to everybody what is a fair return.

American Management Association Meeting

The second annual meeting of the American Management Association at the Hotel Astor, New York City, October 29-30-31, will be devoted to the problem of human relations in commerce and industry. A feature of the convention will be the annual dinner on the evening of Tuesday, October 30, at which the subject of discussion will be "stabilizing Prosperity in America." Many of the most difficult problems on employment and management of workers would be solved if a stable flow of prosperity could be assured.

Some of the other important topics to be discussed in the three-day session of the convention are Economics for Employees, Job Description and Man Specifications, Labor Saving Office Equipment, Distributing and Utilizing the Product of the Public Schools, Training for Salesmen, Selection of Supervisory Forces, Tests for Stenographers, Scope and Management of Medical Departments, Use of Motion Pictures in Personnel Work. There will be discussions of the question, "Are Graduates of Collegiate Schools of Business Succeeding?" and "Co-operation with Engineering Colleges."

W. W. Kincaid, president of the Spirella Company, and head of the American Management Association, will speak on Co-ordination as a Management Function. N. I. Stone, general manager, Hicky Freeman Company, will speak on "Labor Efficiency in Good Times and Bad." Elisha Lee, vice-president, Pennsylvania Railway System, will address one of the general meetings of the convention on the subject, "What Has Happened to Supervision and Discipline?"

Fires

The Gadsden Car Works, Gadsden, Ala., owned by Southern Railway interests, sustained a loss of about $300,000 by fire on October 11. The erecting shop, 200 ft. x 600 ft., was destroyed, together with other property, and 66 new freight cars. The main car shop was not damaged.

The Southern Railway Company's coal chute at Selma, Ala., with about 3,000 tons of coal and 13 cars, was destroyed by fire on October 7; estimated loss, including property of the Central Alabama Lumber Company, in whose boiler room the fire started, $150,000.

The car shops of the Pennsylvania Railroad at Camden, N. J., were damaged by fire on the night of October 15 to the extent

of about $500,000. One of the four main buildings, 60 ft. x 300 ft., was destroyed and 12 coaches were badly damaged. By heroic efforts, the small force of men on duty saved 15 comparatively new coaches. Of the 1,800 men employed at these shops, about 400 worked in the section destroyed.

Corrections

In an editorial entitled "Keeping Down the Fire Losses," which was published in the *Railway Age* for October 13, a statement was made to the effect that the fire losses by railways in 1922 were equivalent to a charge of $400 for every mile of railroad in the country. This should have read $40.

The article appearing on page 640 of the *Railway Age* of October 6, under the title "A Compact Cinder Handling Plant," contained an error with respect to the length of the track hopper. This was given as 7 ft., a length which would not be sufficient to handle the cinders from a locomotive in one spotting. These cinder plants are provided with a track hopper 10 ft. long so that the cinders may be readily dumped without moving the locomotive.

Commercial Minerals in Georgia and Alabama

The Industrial department of the Central of Georgia has issued a 154-page book entitled, "Directory of Commercial Minerals in Georgia and Alabama along the Central of Georgia Railway." The publication contains brief descriptions of the commercial and mineral deposits in the sections of Alabama and Georgia served by the Central of Georgia and is also a directory or bibliography of the official publications and special reports containing more complete information concerning these deposits. The collaborators are: Dr. T. Poole Maynard, geologist, who was formerly connected with the United States Geological Survey and the Georgia State Geological Survey; J. M. Mallory, general industrial agent of the Central of Georgia, with headquarters at Savannah, Ga., and R. T. Stull, assistant general industrial agent of the Central of Georgia, and formerly chief ceramist of the United States Bureau of Mines.

The territory included in this directory has been divided by counties alphabetically arranged with reference in many cases to the nearest station to the particular deposit. The index carries the names of the various minerals as well as the counties and stations where they occur. Included in the directory is a geological map which shows the geological and physiographic provinces and the position of the various rocks and minerals. The map also shows the lines of the railway, the transmission lines of the different power companies and the undeveloped water power. The book is illustrated with pictures of industries, water works, power plants and mines along the railroad.

Railroad Labor Board Refuses Signalmen's Plea

The Railroad Labor Board, acting on the application of signalmen employed on 46 railroads has denied their request for increases in pay ranging from thirteen to twenty-three cents an hour. The decision says that it was not in evidence, as was claimed, that there has been an increase in the cost of living since June 10, 1922, sufficient to justify an increase in wages. According to figures of the bureau of labor statistics the cost of living increased from June, 1922, to June, 1923, only 1.9 per cent. Referring to the wages in the building trades the Board maintained that these furnish no safe criterion at this time, since the accumulated housing shortage has resulted in highly artificial conditions in that industry. The only direct way in which these temporarily high wages in the building trades affect railway wages is by a tendency to draw certain classes of railway employees from the railway service; but the irregularity of employment in the building trades must be considered as compared with the steadiness of the employment of the signalmen. Certain of the carriers have voluntarily granted increases in pay to this class of employees; twelve Class I roads.

In a dissenting opinion Mr. Wharton denounced what he termed an appalling disregard for the merits of the case. He suggested that competent persons should be employed to analyze all the decisions of the Board to determine whether or not railroad labor has been fairly treated, in accordance with the pledge of those who enacted the labor provisions of the transportation act. This was answered by Mr. Hooper, who thought that this suggestion should be amplified by the additional thought that a bunch of real dirt farmers participate in the analysis, and that they begin with this particular decision. Mr. Barton, in a second supporting opinion, added that the Board cannot overlook the fact that the cost of operation is a largely determinative factor in the fixing of freight and passenger rates; that the labor cost is a large percentage of the operating cost and that freight and passenger rates have to be borne largely by the consumers. High rates inevitably seriously affect all lines of production. There is from every section of the country a call of distress from the agricultural class whose earning capacity has been so seriously affected.

Requests for More Pay

The Order of Railroad Telegraphers and the International-Great Northern Railroad have jointly submitted to the Railroad Labor Board a dispute concerning wages. The employees contend for a specified rate for each position rather than any flat increase and professedly aim to inequalities said to have resulted from certain general orders of the railroad administration and from certain decisions of the board. The road proposes a uniform decrease of four cents an hour.

Conductors, trainmen and yardmen of the Gulf, Colorado & Santa Fe have presented demands to the road for wage increases averaging 20 per cent above the present scale.

Maintenance of way workers and railway shop laborers employed by the Fort Smith & Western have filed petitions with the United States Railroad Labor Board asking increases amounting to 15 cents an hour for trackmen having six months or more of service; 11½ cents an hour for those with less than six months service and the same for laborers not required to perform track work.

Maintenance of way employees of the Green Bay & Western have filed a request with the Railroad Labor Board for increases ranging from 8½ to 15 cents an hour. A submission was also received from the same class employed by the Delaware, Lackawanna & Western asking advances from 11 to 15 cents an hour.

Telegraphers on the Nashville, Chattanooga & St. Louis have submitted a plea to the United States Railroad Labor Board for increased rates of pay for a number of specified positions.

County Fair Has "Great Northern" Day

During the Wilkin county fair held at Breckenridge, Minn., September 21 was called "Great Northern" day and the program for that day was in charge of officers of the Great Northern. The program included a discussion of the railway situation by five dirt farmers, for which the Great Northern offered a first prize of $50 and a second prize of $25. All speakers stressed the fact that the interest of the railroad and the farmer was the same and that they should work together to solve the problem that confronts both. Each of the speakers also said that the farmers were devoting too much time to raising small grain and not enough to diversified farming.

Speakers for the Great Northern were: M. L. Countryman, vice-president and general counsel, and Edward F. Flynn, assistant to the vice-president and general counsel. C. L. LaFountaine, supervisor of safety, projected Great Northern safety moving pictures in the evening.

Aside from the program, the Great Northern was represented by display booths and exhibited the "William Crooks," the first locomotive to enter the state of Minnesota. A large modern locomotive was displayed opposite the "William Crooks" to show the evolution of engines on the Great Northern since September 6, 1861, when the "William Crooks" arrived at St. Paul, Minn. It is estimated that 10,000 people examined the engines. At the locomotive exhibition pamphlets were distributed which described the old wood-burning locomotive and told how railroads help to increase the wealth of western farmers.

The attendance on Great Northern day was 5,000, which establishes a record for both attendance and receipts. The program met with such success that the Great Northern has been requested to take charge of one day's program of the Wilkin county fair in 1924.

Traffic News

The Eastern Steamship Lines announce that two new steamers are under construction, the "Boston" and the "New York," to be used next year in passenger and freight service between New York and Boston. Each vessel will be 402 ft. long and carry 900 passengers. They will be larger than the "Harvard" and the "Yale," and will cost $1,750,000 each.

"The Land of Bob White" is the title of a handsome booklet that has been issued by the Southern Railway containing an interesting story about hunting quail (partridge) by Henry Wysham Lanier of New York, an author of note. The book is illustrated with photographs of dogs and quail, and gives hunting laws in various states in the South, covering hunting seasons; also a list of places where there is the best quail hunting.

Anthracite Shipments for September

Shipments of anthracite for the month of September, as reported to the Anthracite Bureau of Information, Philadelphia, amounted to 2,194,940 gross tons. Operation was resumed on September 19, and during the ten working days to the end of the month, there was a daily average shipment of 219,490 gross tons. This daily average could have been materially increased had the collieries resumed full operation on September 19. Some, because of an insufficient force of men, did not resume operation until a later date. The average daily shipment during the preceding month of August, was 247,105 tons. Shipments by originating carriers were as follows:

	September, 1923	September, 1921	August, 1923
Philadelphia & Reading	420,859	1,081,085	1,277,770
Lehigh Valley	372,997	966,600	1,154,004
Central of N. J.	154,200	576,875	496,725
Dela., Lack. & Western	218,182	736,571	1,004,507
Delaware & Hudson	298,775	711,199	943,143
Pennsylvania	196,839	426,344	555,064
Erie	251,277	631,882	759,711
N. Y., Ont. & Western	61,229	123,742	154,586
Lehigh & New England	120,582	265,114	327,345
	2,194,940	5,519,412	6,672,855

Meeting of the Great Lakes Shippers' Regional Advisory Board

The Great Lakes Shippers' Regional Advisory Board met at Buffalo, N. Y., on October 9, with about 150 shippers and railroad men present. The presiding officer was L. G. Macomber. Shippers' representatives came from southern Michigan, northern Indiana, northern Ohio, northwestern Pennsylvania and western New York. It was voted to hold the next meeting at Cleveland, Ohio, in December. The various commodity committees reported almost uniformly that no car shortage existed. The automobile committee reported that in the next two months 60,000 freight cars will be required by that industry. In the soft coal industry, it is said that production is now too fast, and some of the mines probably will have to suspend temporarily. Spot prices are lower than they have been before for six years, and great quantities of coal are being stored.

D. D. Conn for the American Railway Association, who was present, announced that a regional board was to be organized for the New England district.

Among the shippers' representatives present were K. A. Moore, automobiles; E. C. Nettles, grain, hay, etc.; W. S. Crowl, salt and chemicals; H. M. Griggs, coal, coke and ore; J. C. Coppock, sand, gravel and stone; A. S. Waltz, live-stock and fertilizers.

Ohio Valley Shippers' Board Organized

Shippers from Ohio, West Virginia, Kentucky and Indiana, at a meeting in Cincinnati on October 11, organized the Ohio Valley Shippers' Regional Advisory Board, of which Theodore Davis, district manager of the Southern Hardwood Traffic Association, was named chairman. F. N. Renshaw, traffic manager, Chamber of Commerce, Cincinnati, was named secretary. The board is like similar boards that have already been formed in various parts of the country with a view to bringing about closer co-operation between shippers and railroads.

The territory of the board includes the state of Ohio south of the Erie Railroad, the coal-producing sections of West Virginia, all of Kentucky, and nearly all of Indiana except the extreme northern part.

D. D. Conn (A. R. A.) addressing the meeting, said:

"This is a shippers' organization entirely, the railroads are not taking any part in it. It is the purpose of the railroads to co-operate with these boards. Another purpose of the board is to form a common meeting ground for the shippers, local railroads and the carriers as a whole for the better mutual understanding of local and general transportation requirements. Another object is to adjust informally car difficulties which may arise, as well as to study production, distribution and trade channels."

Freight Commodity Statistics to July 1

The Interstate Commerce Commission has issued its quarterly statement showing by districts the freight tonnage transported by Class I steam railways of the United States for the quarter ended June 30, 1923. By general classes of commodities, the tonnage, compared with the same quarter of 1922, was as follows:

	Number of tons originated		
Classes of commodities	Quarter ended June 30, 1922	Quarter ended June 30, 1923	Per cent of Increase
Products of agriculture	19,965,391	19,629,102	*1.68
Animals and products	6,150,416	6,650,007	8.12
Products of mines	101,338,220	184,322,057	81.89
Products of forests	22,779,953	30,938,739	35.82
Manufactures and miscellaneous	57,258,094	73,468,208	28.31
Merchandise—All L. C. L. traffic	11,036,921	11,652,057	5.57
Total	218,528,995	326,660,170	49.48

	Total tons carried		
Classes of commodities	Quarter ended June 30, 1922	Quarter ended June 30, 1923	Per cent of Increase
Products of agriculture	43,583,656	43,648,868	.15
Animals and products	10,846,813	11,802,332	8.81
Products of mines	180,471,075	322,433,843	78.66
Products of forests	45,913,216	60,851,671	32.54
Manufactures and miscellaneous	112,557,162	142,842,060	26.91
Merchandise—All L. C. L. traffic	18,057,427	19,249,106	6.60
Total	411,429,349	600,827,880	46.03

*Decrease.

DR. MORTIMER E. COOLEY, president of the American Engineering Council of the Federated American Engineering Societies and dean of the College of Engineering and Architecture of the University of Michigan, has resigned from the council on account of ill health.

St. Gotthard Railway in Pfaffensprung Gorge

Commission and Court News

Interstate Commerce Commission

The reopened hearing on the application of the Virginian Railway for authority to construct an extension to serve a coal mine has been postponed from October 19 to October 31.

The Commission has issued its decision disapproving proposed increased rates on iron and steel articles from Pittsburgh-Buffalo territories and certain territories east thereof to Virginia cities and points taking the same rates. The suspended schedules were ordered cancelled and the proceeding discontinued.

The Commission has issued a decision disapproving the proposed cancellation of proportional class rates applicable between interior Iowa points and certain Minnesota, Missouri, and South Dakota points on the one hand, and points east of the Indiana-Illinois state line on the other hand, on carload and less than carload freight moving through Burlington, Clinton and Keokuk, Ia.

The Commission has reopened for further hearing, on various petitions which have been filed, its proceeding regarding the distribution among coal mines of privately owned cars and cars for railroad fuel, and has postponed the effective date of its order from November 1 to December 1. This is the second postponement of the order, which was originally made to go into effect on September 1. A hearing before Commissioner Aitchison has seen set for Washington on October 22.

The Commission has issued a decision finding that the transportation, refrigeration and car heater charges on apples and fresh fruit from points in Washington to destinations in certain other states are not unreasonable. The complaint of the Wenatchee Valley Fruit Exchange, which had asked the restoration of the rates in effect prior to the general increases of 1918 and 1920, was dismissed; but the commission says that its finding is without prejudice to such conclusions as might be reached upon a broader record covering wider areas of production and affording more data for determining whether the destination groups should be broken up and rates made to conform more nearly to distance. Commissioner Hall, while concurring with the disposition made, says he deems unnecessary the discussion of such extraneous matters as might be presented upon other issues.

Injunction Against Express Routing Order

In the Federal Court at Atlanta, Ga., on October 9, a permanent injunction was issued enjoining the Interstate Commerce Commission from enforcing its order requiring the American Railway Express Company to deliver to the Southeastern Express Company, at Washington, certain shipments coming from the northeastern states and destined to points on the main line of the Southern Railway.

The majority opinion, by Judges Sibley and Ervin, holds that an express company, being a carrier by rail within the meaning of the law, cannot be required to short-haul a shipment unless the long haul would result in unnecessary delay. Judge Bryan dissented, holding that if an express company is to be classed as a carrier by railroad and thus has a right to the long haul over railroads with which it has a contract, then the American, having contracts with all railroads except the Southern, can prevent competition; and thus would unduly monopolize the express business of the country.

THE FEDERAL HOURS-OF-SERVICE LAW—16 hours a day for trainmen, 9 and 13 hours for telegraphers—is to be applied to the operation of the government-owned railroad in Alaska. Secretary of the Interior Work has issued an order applying the terms of the federal statute to the 613 miles and 1,136 employees of the road and also incorporating the hours-of-service law as a part of the regulations of the road.

Foreign Railway News

Big Gain in New Zealand State Railway's Net Earnings

Net earnings of the New Zealand Railways for the year ended March 31, 1923, amounted to £1,225,305 out of a gross revenue of £6,727,802, and represent 3.04 per cent on capital invested. Net earnings increased 200 per cent over those for the preceding year. The operating ratio amounted to 81.79 per cent of the revenue, 12.12 per cent lower than for 1921-22. The improved showing is credited to drastic economy, says Vice Consul J. F. Moran in a report to the Department of Commerce.

Spanish Railway Earnings

Earnings of the principal Spanish railways continue to show increases, as compared with a year ago, as shown by the following published figures for the first 5 months of 1923; received by the Department of Commerce from Vice-Consul C. A. Castle, Barcelona:

Line	Receipts Pesetas*	Increase over 1922, Pesetas
Ferrocarril del Norte	121,485,447	4,602,126
Madrid, Zaragoza y Alicante	109,623,632	4,996,402
Ferrocarriles Andaluces	21,591,999	352,080

*The exchange rate of the peseta for the five-month period averaged $0.15.

Proposed New Railways in Chile

A bill calling for the expenditure of considerable sums annually in new railroad construction has recently been approved by the Chilean National Council of State and will shortly be submitted to Congress, according to a report to the Department of Commerce from the commercial attache's office in Santiago. It is believed inadvisable to delay longer the construction of lines needed for the development of some of the best agricultural sections of the country.

The bill proposes to finance the new lines with surplus earnings of the existing state railways which are increasing as the result of more efficient management and lessening interest requirements as old railway loans are liquidated.

The bill provides that large deposits be made by the state railway administration during 1923 and 1924, and that preference be given to construction of railroads for which property has been ceded gratuitously or money or materials given by neighboring property owners.

Tarafa Bill Becomes a Law

President Zayas of Cuba signed on October 9 the Tarafa port and railroad bill.

The measure, designed to provide for consolidation of Cuban railroads and for establishing national ports, was the subject of many protests from representatives of American sugar concerns, and before taking final action the President had conferences with advocates and opponents of the bill.

As finally enacted by the Cuban Congress, the measure provided that exports and imports might move only through national ports, which were named, but corporations or individuals now using private ports of their own might make application for permits to continue such use of their own ports. Representatives of sugar mills asserted that there was nothing in the measure that guaranteed them getting such permits. If they could not use their own ports, they claimed, they would be forced to pay railroad freights to more distant shipping points. Practically all large ports in established cities and towns were named as national ports.

SECOND-HAND RAILS, sold by the Southern Pacific Company since the first of January last, have amounted to 15,500 tons, and the sales brought to the company $567,000. These sales, which are about 40 per cent heavier than similar sales last year, are made mostly to lumber concerns in California and Oregon.

Equipment and Supplies

Locomotives

THE MISSOURI PACIFIC contemplates buying about 60 locomotives.

THE LOUISVILLE & NASHVILLE contemplates buying about 35 locomotives.

THE ST. LOUIS & O'FALLON is inquiring for 1 Prairie type locomotive.

THE HARTLAND RAILROAD has under consideration the question of purchasing 1 locomotive.

THE RUTLAND has under consideration the question of purchasing 4 Pacific type locomotives.

THE TOLEDO, ANGOLA & WESTERN is considering the question of purchasing a Mikado type locomotive.

THE LOUISVILLE, HENDERSON & ST. LOUIS has under consideration the question of purchasing 2 Pacific type locomotives.

THE ARGENTINE STATE RAILWAYS have placed an order for 1 Mountain type locomotive with the Baldwin Locomotive Works.

THE SOUTHERN PACIFIC is inquiring for 20, 0-6-0 switching type locomotives. This is in addition to the inquiry for 58 locomotives reported in the *Railway Age* of October 13.

Freight Cars

THE ST. LOUIS SOUTHWESTERN is inquiring for 150 steel underframes for flat cars.

THE SOUTHERN PACIFIC program for new equipment, it is understood, calls for the purchase of about 18,000 cars.

THE UNION PACIFIC program for new equipment, it is understood, calls for the purchase of several thousand cars.

THE SOUTHERN PACIFIC has ordered 16 Kilbourne & Jacobs type automatic dump cars of 20 yd. capacity from the Case Crane & Engineering Co.

THE MEXICAN PETROLEUM COMPANY has placed an order for 100 tank cars of 10,000 gal. capacity with the American Car & Foundry Company.

THE CHICAGO & ALTON, reported in the *Railway Age* of August 25 as inquiring for 250 composite gondola cars and 360 composite gondola car bodies, has placed an order for cars with the Pullman Company and an order for car bodies with the Ryan Car Company.

Passenger Cars

THE SOUTHERN PACIFIC contemplates buying about 125 new cars for passenger service.

THE NEW YORK, WESTCHESTER & BOSTON contemplates buying about 10 cars for passenger service.

THE LOUISVILLE, HENDERSON & ST. LOUIS is inquiring for 3 baggage and mail cars, 2 coaches and 2 smoking cars.

THE INTERBOROUGH RAPID TRANSIT CO. is inquiring through the Rapid Transit Subway Construction Company for 100 steel motor cars for its subways.

THE INTERBOROUGH RAPID TRANSIT COMPANY is inquiring through the Rapid Transit Subway Construction Company for 100 steel motor cars for its subways, with an option on 150 additional cars.

THE PHILADELPHIA & READING, reported in the *Railway Age* of September 22 as inquiring for 40 steel suburban coaches and 10 steel suburban combination coach and baggage cars, has ordered this equipment from the Bethlehem Shipbuilding Corporation, Harlan plant.

Iron and Steel

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS is inquiring for seven deck plate girder spans, one I-beam span and two through girder spans. This company is also inquiring for six deck plate girder spans for the Cincinnati Northern.

Machinery and Tools

THE PENNSYLVANIA is inquiring for 34 two-ton electric jib cranes.

THE ERIE has placed orders for additional flue shop equipment with Joseph T. Ryerson & Son.

THE UNION PACIFIC has ordered a five-ton self-supporting jib crane from the Whiting Corporation.

THE CHESAPEAKE & OHIO has ordered six 150-ton steam wrecking cranes from the Industrial Works.

THE PENNSYLVANIA has placed an order for a 100-in. boring mill, also for 2 42-in. boring mills and a heavy 42-in. by 16 ft. planer.

THE ILLINOIS CENTRAL is inquiring for one 1½ to 6-in. motor-driven tube cutting machine for use at Vicksburg, Miss., and one 54-in. heavy-duty motor-driven lathe for use at Waterloo, Iowa.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE is inquiring for one motor-driven wet and dry grinder, one double-head bolt cutter to cut 1½ to 2 in. bolts, one five-foot steel radial drill, one three-foot radial drill and one 300-cu. ft. air compressor.

THE PHILADELPHIA & READING has awarded a contract to the Bury Compressor Company for two heavy duty duplex air compressors, with motors, exciters, starting panels, coolers, aftercoolers, and other apparatus for use in connection with the new terminal at Camden

Miscellaneous

THE LONG ISLAND will receive bids until 12 o'clock noon, October 31, at Jamaica, N. Y., for 130 rolled steel wheels.

THE NORFOLK & WESTERN will receive bids until 12 o'clock noon, October 31, at Roanoke, Va., for 400, 33 in. wrought steel wheels and 500 cast steel side frames.

Rumored That P. R. R. Will Buy Many Cars, Locomotives and Much Rail

It is reported from several sources that the Pennsylvania is making plans for the purchase of a large number of locomotives and cars and also of a considerable tonnage of rail. This information has not as yet been officially confirmed.

Locomotive Shipments in September

The Department of Commerce has given out its September figures on shipments of locomotives from the principal manufacturing plants, based on reports received from the individual establishments, as follows:

LOCOMOTIVES

	September, 1923	August, 1923	September, 1922	Nine months' total, January to September 1923	Nine months' total, January to September 1922
Shipments—					
Domestic	313	259	113	2,115	585
Foreign	22	13	6	136	175
Total	335	272	119	2,251	760
Unfilled orders (end of month)—					
Domestic	1,102	1,406	1,347	.....	.....
Foreign	76	91	116	.....	.....
Total	1,178	1,497	1,463	.....	.....

Supply Trade News

The erecting shed and adjoining property of the **Gadsden Car Works,** Gadsden, Ala., an auxiliary of the Southern railway, was destroyed by fire on October 11 at an estimated loss of $300,000.

John Baker, whose appointment as assistant vice-president of the **Locomotive Fire Box Company,** manufacturers of Nicholson thermic syphons, was announced in the *Railway Age* of October 6, entered railway service with the Lake Shore & Michigan Southern, which is now a part of the New York Central, as clerk and stenographer for the assistant trainmaster. In May, 1903, he entered the employ of the Chicago, Rock Island & Pacific, since which he has been successively stenographer for the roadmaster and the superintendent, secretary to the general superintendent of motive power, chief clerk to the master mechanic and superintendent of motive power and chief clerk to the general superintendent of motive power. He held the latter position for the last four years, and resigned to become associated with the Locomotive Fire Box Company on October 1.

John Baker

The American Brake Shoe & Foundry Company will construct a new plant at North Kansas City, Mo., and is now accepting bids on a foundry, sand and cleaning shop and machine and repair shop, at an estimated cost of $300,000.

Obituary

Joseph Hyde Ames, chief engineer, American Car & Foundry Company, died suddenly at Chicago on October 11, and was buried at Lee, Mass. He was born at Brimfield, Mass., on March 22, 1865, and his early education was received at Kings School, Stamford, Conn. He started his professional career with the Northern Pacific at St. Paul, and in 1885, he went to the Peninsular Car Company, Detroit, as draftsman and estimator, later being made assistant superintendent. When the Michigan-Peninsular Company was formed in 1892, he was put in charge of the engineering work, and later was made assistant general manager. Upon the formation of the American Car & Foundry Company in 1899, he was given the title of mechanical superintendent of the two Detroit plants. In 1905, he was promoted to chief engineer, in charge of improvements to plants and machinery, being located at St. Louis for some years and later at Chicago. During the war activities from 1916 to 1919, he was in charge of all engineering work on war contracts at the Detroit plant. Since 1919, his headquarters have been in New York City. Mr. Ames was widely known as an engineer and was considered an authority on car design and manufacturing equipment.

J. H. Ames

Trade Publications

THERMIT RAIL WELDING.—The Metal & Thermit Corporation, New York, has recently issued a 72-page, illustrated pamphlet devoted to recent improvements in thermit rail welding. The text includes detailed instructions accompanied by illustrations, for the making of rail welds by the improved method. The apparatus used in conjunction with rail welding as, for instance, a self-luting mold box and a light-weight double-burner preheater are described in detail. Other instructions are included covering the use of thermit for welding compromise joints, constructing frogs and crossings and for repairing loose arms of gates and switches. In addition to the above, the pamphlet contains data on rail bending and drop tests as well as a discussion of the theory of rail joints.

WATERPROOFING.—The General Fireproofing Company, Youngstown, Ohio, has issued the sixth edition of a handbook on waterproofing. The booklet, which is a 72-page assembly, is illustrated by photographs of recent construction projects upon which the G. F. waterproofings and preservatives are used and, for the convenience of the reader, is divided into four sections as follows: Section 1—Substructural Waterproofing, devoted to the methods and materials for the waterproofing of foundations, basements, pits, tanks, pools, containers, and other structures subjected to hydrostatic pressure or dampness; Section 2— Superstructural Waterproofing, devoted to methods and materials for rendering walls, and roofs proof against weathering and dampness, for the stainproofing of cut stone, for the preservation and beautifying of stucco, brick and concrete walls, and for filling expansion joints; Section 3—Cement and Wood Floor preservation, devoted to methods and materials for hardening, dustproofing, decorating and waterproofing cement and wood floors and for accelerating the setting and preventing the freezing of newly laid cement floors; and Section 4—Technical Paints and Coatings, devoted to the methods and materials for rendering walls, floors, and containers proof against acids and oils, for protecting structural steel and galvanized surfaces from rust and timbers from dry rot and decay, for bonding new concrete to walls, for waterproofing and hardening cut stone and cement blocks and for stainproofing limestone. Each section opens with a specification guide which tabulates various methods adapted to each problem and gives an index of the products useful in each case. This specification guide is then followed successively by a description of each method followed in turn by a description of the various products for use under the particular method involved, and specifications as to their use. In all cases the specifications are illustrated with drawings to show how the work should be carried out.

THE WESTINGHOUSE ELECTRICAL INTERNATIONAL COMPANY has received orders for electrical apparatus to be used in reconstruction work in Japan; the total cost will be over a million dollars. Other orders are in course of negotiation which will bring the total amount to about two million dollars.

THE SOUTHERN PACIFIC has issued a bulletin describing the agricultural and industrial advantages and resources of Oregon. The bulletin contains a description of the territory along the route of its proposed line from Kirk, Ore., to Oakridge, and contains pictures illustrative of the state. The bulletin is being distributed on the Pacific Coast, in principal cities of the United States and in Europe.

JOHN REED PORTER, a Union soldier, 85 years old, who died at Dayton, Ohio, on October 15, was the last survivor of the Andrews Raiders who, in April, 1862, got inside the Confederate lines, took the locomotive "General" of the Western & Atlantic, while its custodians were off the engine eating dinner, and ran it 80 miles through Confederate territory before they were captured. Most of the men were soon tried by their captors and were put to death. Their monument, surmounted by a bronze miniature of the "General," stands in the National Cemetery at Chattanooga, Tenn., and the locomotive itself is preserved in the passenger station at that city.

Railway Construction

AMERICAN NIAGARA RAILROAD CORPORATION.—This company has been authorized by the Interstate Commerce Commission to build a line from a connection with the New York Central at Tonawanda, N. Y., across the east branch of the Niagara river and Chippewa Channel to a point on the International boundary. Another company, the Canadian Niagara Bridge Company, has obtained authority in Canada to continue the line to a point on the Michigan Central near Welland, Can., the two lines to form a new connection between railroads on the American and Canadian sides of the Niagara river. The company is controlled by the New York Central and the Canadian Pacific.

ATCHISON, TOPEKA & SANTA FE.—This company has purchased a 200-acre tract near Cassoway, Kan., as a site for an 800,000,000 gal. water storage reservoir. The plan calls for a concrete dam on the Walnut river 2,200 ft. long with a 250-ft. spillway.

CHICAGO & EASTERN ILLINOIS.—This company has awarded a contract to Bairnsfather Construction Company, Salem, Ill., for the construction of a passenger station at Johnston City, Ill., at an approximate cost of $20,000.

CHICAGO, BURLINGTON & QUINCY.—This company closed bids on October 17 for the concrete foundation of the Union Station at Davenport, Iowa.

CHICAGO GREAT WESTERN.—This company closed bids on October 11 for the construction of a four-stall addition to its roundhouse at Ft. Dodge, Iowa.

FT. WAYNE UNION RAILROADS.—This company has filed a petition for a franchise for the construction and operation of a double-track railway to serve the Fort Wayne plant of the International Harvester Company and other industries in that city and to form belt line connections with other Fort Wayne railroads.

ILLINOIS CENTRAL.—This company closed bids on October 11 for the construction of a pumping station, pipe lines, water columns and tank complete at Pond Creek, Ky.

KANSAS CITY & GRANDVIEW.—This company has been authorized by the Interstate Commerce Commission to build a line from Kansas City to Grandview, Mo., 13.48 miles.

MISSOURI PACIFIC.—This company will close bids on October 22 for the construction of a one-story brick passenger station, with a tile roof, 24 ft. by 160 ft., at Bald Knob, Ark.

NEW YORK, CHICAGO & ST. LOUIS.—An ordinance calling for the elevation of this company's tracks at 11 street crossings in Fort Wayne, Ind., is being prepared by the Board of Public Works.

NEW YORK, CHICAGO & ST. LOUIS.—This company is preparing plans for the double tracking of its line between Buffalo, N. Y., and Chicago, to be completed within three or four years.

PENNSYLVANIA.—This company has awarded a contract to Herman Tapp, Fort Wayne, Ind., for work amounting to $70,000 in connection with track elevation work at the Hanna and Lafayette street crossings of the Pennsylvania and the Wabash Railways at Fort Wayne, Ind.

PUBLIC BELT.—This company, owned by the Harris County Houston Ship Channel Navigation District, and not the Houston Belt & Terminal, as reported in the *Railway Age* of September 22, has awarded a contract to List & Gifford, Dalias, Tex., for the construction of a car classification yard at Houston, Tex., to cost $120,000.

ST. LOUIS-SAN FRANCISCO.—This company closed bids on October 12 for the construction of a one-story brick mail and express building, 40 ft. by 326 ft. at Springfield, Mo.

SOUTHERN PACIFIC.—This company has been ordered by the Railroad Commission of California to prepare, within 90 days, detailed plans for a passenger station at Sacramento, Cal.

Railway Financial News

BELT RAILWAY OF CHICAGO.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue 2,400 additional shares of common stock to be sold and delivered to the Pere Marquette for $240,000.

BLYTHEVILLE, BURDETTE & MISSISSIPPI RIVER.—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for authority to abandon its line of 7 miles from Burdette, Ark., to a timber property owned by the Three States Lumber Company.

BONHOMIE & HATTIESBURG.—*Asks Authority to Issue Securities.*—This company has applied to the Interstate Commerce Commission for authority to issue $100,000 of capital stock and $255,000 of first mortgage 6 per cent gold bonds to cover the purchase price of the Hattiesburg branch, which the company has taken over from the Gulf, Mobile & Northern.

CANADIAN NATIONAL RAILWAYS.—*Director Resigns.*—Richard P. Gough, of Toronto, has resigned as a director.

CHICAGO & ALTON.—*Wants Rail Lease Cancelled.*—See Joliet & Chicago.

CHICAGO & NORTH WESTERN.—*Authorized to Draw Down Bonds.*—This company has been authorized by the Interstate Commerce Commission to procure authentication and delivery to its treasurer of $9,277,000 of first and refunding mortgage gold bonds to be held in the treasury.

GREAT NORTHERN.—*Annual Report.*—This company's annual report for 1922 is reviewed in an article on another page of this issue entitled "Great Northern Condition Shows Improvement."

ILLINOIS CENTRAL.—*Asks Authority to Issue Preferred Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell to the present stockholders not to exceed $12,022,450 of 7 per cent preferred stock, amounting to 10 per cent of the common stock outstanding, and also to issue a similar amount of common stock to be exchanged for preferred stock from time to time. The proceeds are to be used in the electrification and enlargement of terminal facilities at Chicago.

Preferred Stock Offered.—Approximately $11,000,000 of additional 6 per cent convertible preferred stock was offered to the holders of the common stock in notices sent out yesterday. The stock is to be sold, subject to the approval of the Interstate Commerce Commission.

Under the plan each holder of common stock will be entitled to subscribe at par for the preferred stock equal in amount to 10 per cent of the holdings registered in his name at the close of business Oct. 23. The stock is to be paid for in two installments of 50 per cent each, one on December 1, and the other on March 1, 1924. Interest at the rate of 6 per cent will be paid on the installments paid on or before December 1. The proceeds of the sale will be used in furthering the construction of the Chicago Terminal, which when completed will cost approximately $82,000,000. This is the second of the preferred stock issues to be sold for this purpose, the other being for between $10,000,000 and $11,000,000.

JOLIET & CHICAGO.—*Separation from Alton Planned.*—The stockholders' committee of which Joseph Walker, president of the Joliet & Chicago, is chairman, plans to bring suit against the Chicago & Alton for the cancellation of the company's lease.

The Joliet & Chicago was opened for traffic July 4, 1856, and on January 1, 1864, was leased in perpetuity to the Chicago & Alton, thus forming a part of the latter's through line from Chicago to St. Louis. The annual rental provided in the lease was equivalent to 7 per cent on the stock and $2,000 per annum for organization purposes.

KANSAS CITY SOUTHERN.—*Equipment Trust Certificates Authorized.*—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of $1,320,000 of equipment trust certificates to be sold at not less than 97.03.

MIDLAND RAILWAY.—*No Bidders.*—There were no bidders for this property as a whole when it was offered for sale at auction on October 2. Three locomotives, several cars and an interest

in real estate were sold. The Midland Railway operates for freight service only between Savannah, Ga., and Midville, 90 miles.

NEW YORK, CHICAGO & ST. LOUIS.—*Preferred Stock Offered.*—A syndicate headed by the Guaranty Company of New York, Lee, Higginson & Co., the Union Trust Company of Cleveland and Hayden, Miller & Co., of Cleveland, is offering $15,000,000 6 per cent cumulative preferred stock at $87.50 a share, to yield 6.85 per cent.

The stock being offered to the public will not increase the capitalization of the company, but was purchased from O. P. and M. J. Van Sweringen of Cleveland and their associates, who will use the proceeds from the sale of this stock for the retirement of obligations incurred by them in connection with the purchase of stocks of the constituent companies of the Nickel Plate System. The Van Sweringen group is retaining a controlling interest in the Nickel Plate common stock, according to the bankers.

Upon completion of the exchanges of stock under the plan of consolidation the present New York, Chicago & St. Louis will have outstanding $25,865,666 series "A" preferred stock, and $30,405,964 common stock, with $6,854,334 additional preferred and $15,841,936 additional common in the company's treasury. The funded debt amounts to $82,976,000, in cluding $66,944,000 mortgage bonds, $13,262,000 equipment obligations and $2,770,000 miscellaneous items.

NEW YORK, NEW HAVEN & HARTFORD.—*Officers Threatened With Jail.*—A request to commit to jail Edward G. Buckland, vice-president and general counsel, and Arthur E. Clarke, secretary of this company, for refusal to produce certain documentary evidence demanded in deposition proceedings, was made in New Haven, Conn., on Oct. 11 to Attorney Frank S. Bishop, sitting as a notary public. Counsel for the officers, however, gave notice that an injunction would be sought to restrain Mr. Bishop from issuing the mittimus and consequently the hearing was adjourned for two weeks.

Mr. Buckland and Mr. Clarke offered to testify as individuals, but not as officers of the New Haven Company.

The deposition proceedings were part of those pending in Massachusetts courts wherein Edmund D. Codman, of Boston, a stockholder in the Boston & Maine Railroad, seeks to prevent the New Haven Company, as holder of 28 3-10 per cent of the stock of that company, from an alleged effort to control the corporate affairs of the Boston & Maine through its own stock and stock of others.

Federal Suit Dropped.—Indictments against the former directors of the New York, New Haven & Hartford were quashed October 9 when U. S. Attorney Hayward filed writ of nolle prosequi in the criminal branch of Federal District Court at New York. These indictments have been standing since 1914 and were returned against the directors, charging violation of the Sherman Anti-Trust Act in its criminal provision. The directors named in those indictments were William Rockefeller, Charles F. Brooker, Lewis Cass Ledyard, Edward D. Robbins, Charles M. Pratt, George McCulloch Miller, William Skinner, James S. Elton and John L. Billard. The directors were tried and some of them found not guilty. In the cases of the others the jury disagreed.

READING COMPANY.—*Accepts Segregation Plan.*—The stockholders, at a special meeting in Philadelphia on October 15, approved resolutions dealing with the necessary steps to make the segregation plan operative. The acts voted upon were:

Increase of indebtedness in the amount of $64,000,000; creation of a mortgage and deed of trust on any or all of its railroad or other property to secure an issue of bonds of the company, the total authorized issue at any one time outstanding, excluding bonds issued or reserved for refunding, to be limited to the aggregate par value of the outstanding capital stock.

The merger by the Reading Company of the Philadelphia & Reading Railway and twelve subsidiary railroads.

Disposition of the stock of the Reading Iron Company and of the Philadelphia & Reading Coal & Iron Company as contemplated by the third plan and final decree.

Adoption of a bylaw restricting the transfer of shares of stock of the company as provided in the plan and final decree.

The surrender by Reading Company of those of its powers which are inappropriate for a railroad corporation of Pennsylvania, and acceptance by the Reading Company of the constitution of 1874.

Formal approval of the segregation plan by the Interstate Commerce Commission and the Public Service Commission of Pennsylvania is now necessary to make the court decree effective.

SOUTHERN.—*Asks Authority for Nominal Issue of Bonds.*—This company has applied to the Interstate Commerce Commission for authority to nominally issue $5,000,000 of development and general mortgage 4 per cent gold bonds.

Defers Dividend Action.—After a full discussion of the question of inaugurating dividends on the common stock, the board of directors at their meeting on October 11 concluded to adjourn the consideration of the question until the March meeting, at which time the earnings for the full year would be in hand.

SOUTHERN PACIFIC.—*Asks Authority to Operate Spur.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing it to operate a spur line of 4 miles in Tulare County, Calif., as a branch line.

TEXAS & PACIFIC.—*Asks Authority to Abandon Line.*—The receivers have filed a petition with the Interstate Commerce Commission asking authority to abandon and dismantle the line of the Midland & North Western, extending from Midland to Seminole, Tex., 66 miles.

TRANS-MISSISSIPPI TERMINAL.—*Asks Authority to Extend Notes.*—This company, the Texas & Pacific, and the Missouri Pacific have asked the Interstate Commerce Commission for authority to extend for one year at 6½ per cent interest an issue of $3,653,000 of 6 per cent gold notes of the Trans-Mississippi Company guaranteed by the two other companies. The notes have been once extended to November 1, 1923, at 7½ per cent interest.

UNION PACIFIC SYSTEM.—*Six Months' Guaranty Certified.*—The Interstate Commerce Commission has issued to the Secretary of the Treasury a final certificate stating the amount of the guaranty for the six months' period following the termination of federal control for the Union Pacific System, including the Los Angeles & Salt Lake, the Oregon Short Line and Oregon-Washington Railroad & Navigation Company, at $374,293.

Railroads Administration Settlements

The United States Railroad Administration reports the following final settlements, and has paid out and received from the several roads the following amounts:

Huntingdon & Broad Top Mountain Railroad & Coal Co.	$50,000
Pennsylvania System paid Director General	90,000,000
Brooklyn Eastern District Terminal paid Director General	125,000
Gainesville Midland Railway paid Director General	1
Short Lines	
Millers Creek Railroad Company	6,000
Waukegan, Rockford & Elgin Traction Company	2,000
Southwestern Railway Company paid Director General	1,193
Atlantic, Waycross & Northern Railroad Company paid Director General	500

The Pennsylvania item refers to the settlement announced in June. The amount was funded by the government.

Dividends Declared

Chicago, North Shore & Milwaukee.—Preferred (initial) 1½ per cent, payable October 25 to holders of record October 1.

Gulf, Mobile & Northern.—Preferred (initial), 1 per cent, payable November 15 to holders of record November 1.

Joliet & Chicago.—1¾ per cent, payable October 1 to holders of record September 20.

Mahoning Coal Railroad.—Common, $10, payable November 1 to holders of record October 22.

New Orleans, Texas & Mexico.—1¾ per cent, quarterly, payable December 1 to holders of record November 20.

Reading.—First preferred, 1 per cent, quarterly, payable December 13 to holders of record November 27.

Trend of Railway Stock and Bond Prices

	Oct. 16	Last Week	Last Year
Average price of 20 representative railway stocks	58.65	60.25	73.63
Average price of 20 representative railway bonds	81.88	82.04	87.85

DAMAGE TO A LOCOMOTIVE by running into an automobile truck, wrongfully obstructing a crossing, was the subject of a lawsuit at Pittsburgh, Pa., last week in which the Pennsylvania Railroad secured a verdict for $16.30, the amount of the damage, for which it sued Henry B. Witt, owner of the truck. Witt had sued the railroad for $1,860 but he lost his suit. It appears that the locomotive was moving at only about 10 miles an hour and that the truck driver did not stop or slacken speed approaching the crossing. This collision occurred on January 15 last, near Pittsburgh.

Railway Officers

Financial, Legal and Accounting

Horace E. R. Wood, treasurer and assistant secretary of the Chicago & Alton, with headquarters at Chicago, whose retirement on October 1 was announced in the *Railway Age* of October 6, page 649, was born on July 24, 1854, at Brooklyn, N. Y. He entered railway service in 1872 as a clerk in the treasurer's office of the Chicago & Alton and on May 4, 1898, was promoted to secretary and treasurer of the Chicago & Alton, the Joliet & Chicago, the Mississippi River Bridge Company and the Louisiana and Missouri River. On March 8, 1906, he was appointed assistant treasurer and later that year he was promoted to treasurer. In 1907 he was promoted to assistant secretary and treasurer and from February 13, 1908, to 1912, he was also assistant treasurer of the Toledo, St. Louis & Western. On March 17, 1908, he was also appointed secretary and treasurer of the Kansas City, St. Louis & Chicago and from October 14, 1910, to May 4, 1920, he was also secretary and treasurer of the Rutland, Toluca & Northern. On July 31, 1921, he was appointed acting treasurer of the Peoria Railway Terminal Company.

P & A

H. E. R. Wood

C. L. Rohde, paymaster of the Chicago & Alton, with headquarters at Chicago, has been promoted to assistant treasurer and assistant secretary, with the same headquarters. He was born February 12, 1887, at Chicago, and entered railway service in March, 1903, as a clerk in the passenger traffic department of the Chicago, Rock Island and Pacific, with headquarters at Chicago. In November, 1905, he left the employ of the Rock Island to become a junior clerk in the treasurer's department of the Chicago & Alton at New York. In September, 1908, he was promoted to assistant cashier, with headquarters at Chicago, which position he held until March, 1914, when he was promoted to paymaster. He held the latter position until his recent promotion. Besides being assistant secretary and assistant treasurer for the Chicago & Alton and assistant treasurer for the receivers, Mr. Rohde is assistant treasurer of the Kansas City, St. Louis & Chicago, and the Louisiana & Missouri River, and assistant secretary and assistant treasurer of the Mississippi River Bridge Company and the Rutland, Toluca & Northern.

C. L. Rohde

Leonard H. Solly, land agent for the Esquimalt & Nanaimo, with headquarters at Victoria, B. C., has been retired after 35 years of service, but will retain a position on the board of the advisory committee of the Canadian Pacific Natural Resources Department. Coincident with Mr. Solly's retirement, the Esquimalt & Nanaimo land office will be moved from Victoria to Vancouver where it will be consolidated with the land department of the Canadian Pacific.

James Williams, assistant treasurer and assistant secretary of the Chicago & Alton, with headquarters at Chicago, whose promotion to treasurer of the Chicago & Alton and its subsidiary companies, with headquarters at Chicago, was announced in the *Railway Age* of October 13, page 698, was born on June 20, 1887, at Northport, N. Y. He entered railway service on February 7, 1906, in the president's office of the Colorado & Southern at New York and on April 12, 1908, he resigned to enter the employ of the Chicago & Alton in the secretary's office, then at New York. On August 27, 1908, he was promoted to assistant treasurer and on November 1, 1908, he was also appointed assistant secretary, with headquarters at New York and since October 1, 1922, at Chicago. Mr. Williams will handle the duties of treasurer for receivers in conjunction with his duties as secretary of the corporation and will also be secretary, treasurer and transfer agent for the common stock of the Kansas City, St. Louis & Chicago; secretary and treasurer of the Louisiana & Missouri River; secretary and treasurer of the Mississippi River Bridge Company and the Rutland, Toluca & Northern.

James Williams

Traffic

L. C. Jorgensen, assistant general freight and passenger agent of the Green Bay & Western, the Kewaunee, Green Bay & Western and the Ahnapee & Western, with headquarters at Green Bay, Wis., has been promoted to general freight and passenger agent, with same headquarters. He was born January 8, 1878, at Waupaca, Wis., and entered railway service May 1, 1899, as a station helper on a branch line of the Green Bay & Western. Subsequently he was employed as brakeman and fireman until September 17, 1903, when he was appointed chief clerk of the local freight office at Green Bay, Wis., which position he held until April 1, 1911, when he was promoted to local freight and passenger agent, with the same headquarters. He remained in this position until January 1, 1921, when he was promoted to assistant general freight and passenger agent, with the same headquarters, which position he has held until his promotion to general freight and passenger agent, with headquarters at Green Bay, Wis., on October 1.

L. C. Jorgensen

W. W. Trimble, division freight agent of the Missouri Pacific with headquarters at Little Rock, Ark., has been transferred

to Fort Smith, Ark., succeeding **D. E. Carstarphen,** who has retired on account of ill health. **A. W. Aylin** has been appointed division freight agent with headquarters at Little Rock, succeeding Mr. Trimble.

J. J. Davitt has been appointed general agent, freight department, of the Chicago & Eastern Illinois with headquarters at Boston, Mass.

J. Y. Calahan, general passenger agent of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, retired from active service on October 1.

E. F. Deigert, assistant general passenger agent of the Union Pacific, with headquarters at Omaha, Nebraska, has been transferred to Los Angeles, California, in the same capacity.

Charles A. Beck, assistant to the traffic manager of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, has been promoted to general passenger agent, with the same headquarters, succeeding J. Y. Calahan, who has retired under the pension rules after 40 years of service. Mr. Beck was born on February 27, 1887, at Green Springs, Ohio, and entered railway service on August 1, 1903, with the New York, Chicago & St. Louis as a clerk at Green Springs Junction, Ohio. He held this position until October 15, 1910, when he was promoted to assistant city passenger ticket agent, with headquarters at Chicago, which position he held until May 18, 1914, when he was promoted to contracting passenger agent, with the same headquarters. On February 1, 1916, he was promoted to district passenger agent, with headquarters at Minneapolis, Minn., and on May 1 of the same year, he was appointed chief clerk to the general passenger agent at Cleveland, Ohio, which position he held until September 1, 1917, when he was appointed chief clerk to the president, with the same headquarters. On March 1, 1920, he was promoted to assistant to the traffic manager at Cleveland, Ohio, which position he has held until his recent promotion.

C. A. Beck

George R. Lemmer, city passenger agent of the Union Pacific, with headquarters at Chicago, has been promoted to general agent, succeeding George R. Bierman, who in turn has been promoted.

Fred R. Bolles, formerly general manager and traffic manager of the Copper Range, with headquarters at Houghton, Mich., has been appointed traffic manager of the Green Bay & Western, the Kewaunee, Green Bay & Western and the Ahnapee & Western, with headquarters at Green Bay, Wis. **L. C. Jorgensen** has been appointed general freight and passenger agent.

J. H. R. Parsons, assistant passenger traffic manager of the Southern Pacific with headquarters at San Francisco, Cal., has been promoted to passenger traffic manager for the lines west of El Paso, Ogden and Portland with the same headquarters succeeding Charles S. Fee, deceased. A photograph and sketch of Mr. Parsons' career was published in the *Railway Age* of March 17, 1923, page 792.

Lincoln Green, vice-president in charge of traffic of the Southern, with headquarters at Washington, D. C., has been appointed assistant to the president and will be succeeded by **E. H. Shaw,** freight traffic manager, with headquarters at Washington, D. C., who in turn will be succeeded by **E. R. Oliver,** executive general freight agent at New Orleans and resident vice-president of the New Orleans & Northeastern and the New Orleans Terminal Company. Mr. Oliver will be succeeded by **J. E. Fitzwilson,** general eastern freight agent, with headquarters at New York, who in turn will be succeeded by **L. B. Smith,** assistant general freight agent, with headquarters at Charleston, S. C., who in turn will be succeeded by **J. L. Cox,** commercial agent, with headquarters at Columbus, Miss.

W. H. Cundey, assistant general passenger agent of the Denver & Rio Grande Western, with headquarters at Denver, Colo., whose promotion to general passenger agent, with the same headquarters was announced in the *Railway Age* of September 8, page 454, was born on January 10, 1868, at Philadelphia, Pa. He entered railway service on September 25, 1884, in the commercial agent's office of the Wabash, at Denver, Colo., and from November 11, 1884, to November 30, 1890, he held various positions in the passenger auditor's office of the Denver and Rio Grande at Denver. On the latter date he was promoted to ticket stock and voucher clerk in the general passenger department, which position he held until April 30, when he was promoted to assistant city ticket agent. On June 1, 1894, he was promoted to city passenger agent and on June 1, 1895, to traveling passenger agent, with headquarters at Denver. He was promoted to general agent, passenger department, on June 1, 1907, with headquarters at Colorado Springs, Colo., and on January 1, 1915, he was promoted to assistant general passenger agent, with headquarters at Denver, which position he held until September 1, when he was promoted to general passenger agent, with the same headquarters.

George R. Bierman, general agent, passenger traffic department of the Union Pacific, with headquarters at Chicago, has been promoted to assistant general passenger agent, with headquarters at Omaha, Neb. He was born on February 20, 1887, at Omaha, Neb., and entered railway service in October, 1903, as an office boy in the general passenger department of the Union Pacific at Omaha, Neb. Until February, 1913, he held various positions in the general passenger office and the city ticket office at Omaha, when he was promoted to traveling passenger agent, with headquarters at Chicago. After several weeks he was transferred to Pittsburgh, Pa., and remained there until January 1, 1917, when he came to Chicago as chief clerk in the general agent's office. In August, 1917, he enlisted in the United States Army in the 344th Infantry of the 86th Division with which he did overseas duty. He was discharged on January 13, 1919, at Camp Grant, and again entered the employ of the Union Pacific as a special agent on rate work at Camp Funston, Kan., in connection with the discharging of soldiers. On July 1, 1919, he was appointed depot ticket agent at Cheyenne, Wyo., and was in charge of the Union depot and Fort Russell ticket offices. He was promoted to general agent, with headquarters at Chicago, on March 1, 1920, and has held this position continually until his recent promotion.

G. R. Bierman

M. E. Newell, freight traffic manager of the Tennessee Central, with headquarters at Nashville, Tenn., has resigned. He was born on August 26, 1868, at West Newburyport, N. H., and entered railway service in July, 1886, as a clerk for the Railway Car Service Association at Boston, Mass. Thereafter he served as clerk in the car service department of the Atchison, Topeka & Santa Fe at Topeka, Kan., and the Chicago, Rock Island & Pacific at Chicago until September, 1890,

when he entered the service of the Lake Shore & Michigan Southern as a clerk in the freight office at Chicago. He served in this and other clerical capacities until December, 1897, when he was promoted to northwestern freight agent, with headquarters at St. Paul, Minn., which position he held, together with that of agent for the Lake Shore, Lehigh Valley route until January 1, 1899, when he entered the service of the Chicago Great Western as a general agent, with headquarters at Pittsburgh, Pa. He was promoted to division freight agent, with headquarters at Fort Dodge, Iowa, in May, 1904, and resigned in 1909 to become associated with the Alberta Clay Products Company, Medicine Hat, Alta. He re-entered railway service on July 1, 1910, as commercial agent for the Tennessee Central, with headquarters at Chicago, and continued in this position until April 1, 1914, when he was promoted to general freight agent, with headquarters at Nashville, Tenn., holding this position until May, 1922. On the latter date he was promoted to freight traffic manager, with headquarters at Nashville, Tenn., which position he has held until his resignation.

Mechanical

D. R. McGrath, division master mechanic of the Chicago, Burlington & Quincy, with headquarters at Brookfield, Mo., has been promoted to air brake instructor, with headquarters at Chicago, succeeding **P. J. Murrin,** retired on pension after 50 years of active service.

Patrick J. Colligan, master mechanic of the Chicago Terminal division of the Chicago, Rock Island & Pacific, with headquarters at Chicago, whose promotion to superintendent of motive power of the Second district, with headquarters at El Reno, Okla., was announced in the *Railway Age* of October 13, page 698, was born on January 24, 1868, at Rock Island, Ill. He entered railway service in January, 1886, as a machinist apprentice on the Chicago, Rock Island & Pacific and served in this capacity until 1891, when he entered the employ of the Chicago, Milwaukee & St. Paul as a machinist at Savanna, Ill., where he remained until 1893, when he again entered the employ of the Rock Island as a machinist at Horton, Kan. From January, 1894, until 1898, he was a machinist and gang foreman on the Missouri, Kansas & Texas at Dennison, Tex. In 1898 he returned to the Chicago, Rock Island & Pacific as a machinist at Davenport, Iowa, and in 1899 was promoted to roundhouse foreman at Chicago. In 1901 he was transferred as roundhouse foreman to Trenton, Mo., and later to Natick, Ill. In 1903 he entered the employ of the Illinois Central as general foreman and master mechanic at Clinton, Ill., but in 1904 returned to the Rock Island as a gang foreman at Silvis, Ill. In 1905 he was promoted to general foreman at Chickasha, Okla., and from 1906 to 1910, he was master mechanic, with headquarters at Fort Worth, Tex. From 1910 until 1914 he was master mechanic at Dallas, Tex. He served as master mechanic at Chicago from 1914 until his recent promotion.

Engineering, Maintenance of Way and Signaling

W. H. Featherstonhaugh, acting district engineer of the Canadian National, with headquarters at Prince Rupert, B. C., has been appointed division engineer, with headquarters at Calgary, Alta.

M. F. Longwill, division engineer of the Detroit division of the Wabash, with headquarters at Montpelier, Ohio, whose promotion to assistant chief engineer of the Eastern district, with headquarters at St. Louis, Mo., was announced in the *Railway Age* of October 6, page 650, was born in 1884 at Indiana, Pa. He was educated at the Indiana State Normal School at Indiana, Pa., and graduated from the Ohio Northern University in 1906, at which time he entered railway service with the Missouri Pacific. He held various positions in the engineering department of the Missouri Pacific until 1914, when he was promoted to roadmaster. From 1916 to 1917, he was resident engineer of the Union Railway of Memphis and from January 1, 1918, to October 1, 1923, he has been division engineer of the Wabash, with headquarters at Montpelier. Ohio.

Obituary

R. J. Smith, district freight and passenger agent of the Southern Pacific, with headquarters at Santa Barbara, Cal., died on October 6 from paralysis.

J. H. Patton, assistant division engineer of the Union Pacific, with headquarters at Salt Lake City, Utah, was killed on October 11, near Medicine Bow, Wyo., while riding a small railway motor car.

J. D. Couffer, assistant general freight agent of the Pennsylvania, with headquarters in Chicago, died on October 13 at Wilmette, Ill. He was born October 30, 1867, at Covington, Ohio, and entered railway service in April 7, 1886, as a clerk for the Pittsburgh, Cincinnati, Chicago & St. Louis. In 1914 he was promoted to general western freight agent, with headquarters at Chicago. In 1920, he was appointed assistant general freight agent of the Pennsylvania, with headquarters at Chicago, which position he held until his death.

James A. McCrea, vice-president in charge of the central region of the Pennsylvania Railroad System, with headquarters at Pittsburgh, Pa., died on October 17, from pneumonia, at Pittsburgh. A native of Philadelphia, Col. McCrea was born on May 26, 1875. After completing his education at Yale University, he entered the Pennsylvania Railroad service in 1895 at Pittsburgh as rodman in the office of the chief engineer of the Lines West. A year later he was transferred to the maintenance of way department of the Cleveland and Pittsburgh Division, and in May, 1897, was transferred to the Lines East on the Philadelphia division. In May, 1898, he became assistant engineer of maintenance of way and in August of the following year engineer of maintenance of way of the Lines East. In June, 1901, Col. McCrea was returned to the Western Lines and was promoted to superintendent of the Cincinnati Division where he remained until 1906. In January of that year he was transferred to the Long Island Railroad as general superintendent and in November, 1911, became general manager, occupying the latter position when he went to France with General Atterbury in 1917. Upon his return from France on March 27, 1919, he left railroad service to become vice-president of the Bankers Trust Company, New York City. In that position, he was an advisor upon questions arising in connection with railroad investments and finance. He continued with the Bankers Trust Company until October 1, 1920, when he was invited to re-enter the service of the Pennsylvania Railroad System as vice-president in charge of the central region, to succeed the late Richard L. O'Donnel. Col. McCrea is the son of the late James McCrea, who was president of the Pennsylvania Railroad from 1907 to 1913. As the elder Mr. McCrea before becoming president of the company had been the vice-president at Pittsburgh from 1887 to 1907, during the latter part of the period in general charge of the Western Lines, his son, Col. McCrea, on his appointment to the vice-presidency, returned to Pittsburgh with the title held for 20 years by his father. During the World War, Colonel McCrea rendered noteworthy service to his country, on the staff of Brigadier General W. W. Atterbury, director general of transportation of the American Expeditionary Forces. In recognition of this he was awarded the Distinguished Service Medal of the United States government. The Republic of France made him an officer of the Legion of Honor. He was in France from October, 1917, to March, 1919, first as general manager, and later as deputy director general of transportation. In the latter capacity he was a member of the army's general staff, located at General Pershing's headquarters at Chaumont.

J. A. McCrea